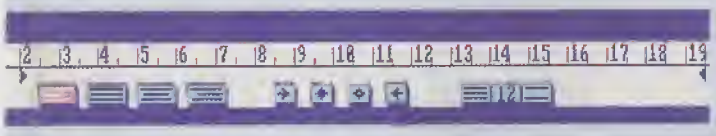
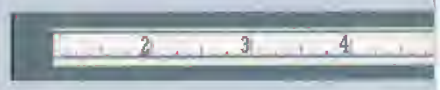
Vol 7 No 9

September $3.50*
1990

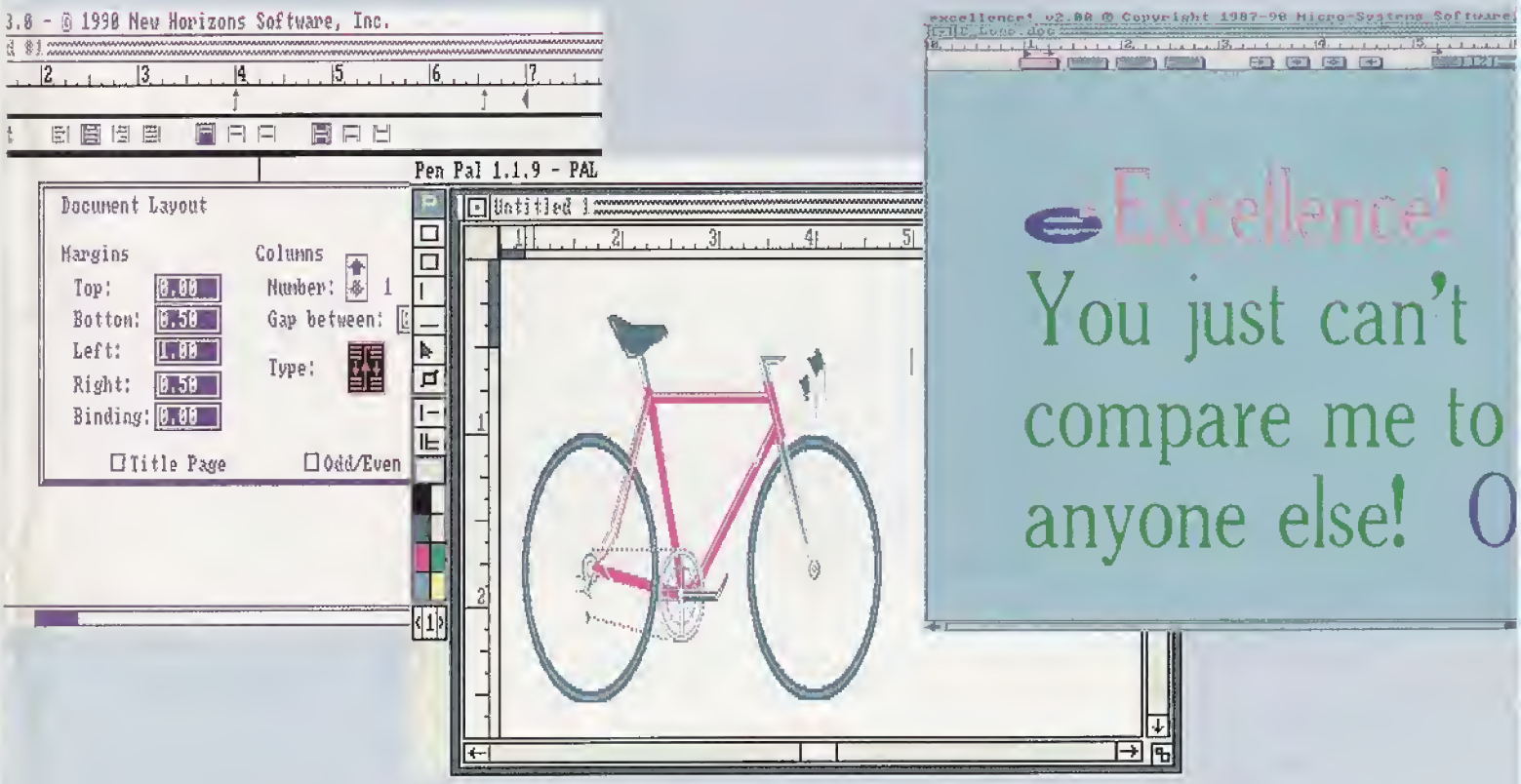
The Australian COMMODORE and AMIGA REVIEW





WYSIWYG Wordprocessor Comparison

Excellence 2.0 vs ProWrite 3.0 vs Pen Pal



Blitz BASIC Preview ● C64/128 CMD Hard Drive ● CLI-Tutorial ● C64 Column ● GEOS Column ● System III Accounts ● Games: Skate of the Art & Hot Rod

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The Australian COMMODORE and AMIGA REVIEW

Editorial	*A meagre editor speaks!*		*2*
Ram Rumbles	*Media sightings, pirates all at sea*		*4*
Notepad	*What's new?*		*6*
Amiga			
WYSIWYG Showdown	*A. Farrell*	*Word processing comparison*	*14*
System - 3	*K. Carpenter*	*Accounts*	*19*
Optical mouse	Competition -	*lay out some cheese*	*22*
Blitz Basic	*A. Farrell*	*Another powerful BASIC*	*34*
In the public domain	*M. Taylor*	*More from Fred Fish & Co*	*36*
CLI - part 4	*A. Leniart*	*AmigaDOS tutorial*	*50*
C 64 / 128			
CMD Hard Drive	*R. Gasson*	*Hardware*	*24*
The 64 Column	*O. James*	*Georam, CD-Rom, Upgrading*	*44*
Sound & Graphics	*G. Perry*	*User defined characters*	*61*
The Geos column	*B. Lyon*	*Geos kernal - and more*	*57*
Programming			
Playing the D Strings	*D. M. Henderson*	*Introducing cyclic strings*	*42*
Entertainment			
That's Entertainment	*P. Campbell*	*Hints & Tips, Hall of Fame Mindscape Competition*	*64*
Game Reviews		*Datastorm, Hot Rod, Block out, Ninja Spirit, Skate of the Art, African Raiders, Crack Down*	*69*
Quick Shots		*A first glance at new games*	*70*
Adventurer's Realm	*M. Spiteri*	*Help for problems, clever contacts, the Origin company*	*77*
Advertisers Index			*80*

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SEPTEMBER
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Editorial

WHAT has happened to Amiga development? It seems lately that all we ever see are new versions. *Excellence!* has hit version 2.0, *ProWrite* is at version 3.0, *Professional Draw* 2.0 is out and *Professional Page* 2.0 is in the pipeline, *Page Stream* 1.8 is shipping and 2.0 is not far off.

Whatever happened to new product development? Well, it is the end of summer in America. Traditionally, the last four months were the worse time to launch a product, and the next four are about the best - just prior to their winter. So, in coming months we can look forward to *Saxon Publisher* - a new publishing program; *Imagine* - a new ray tracing program and *Animation Studio* - a new cel animation package.

What about the C64? The C64 is a great machine and is still good value for money. But new software releases are now mainly ports from other machines, and games. Nevertheless *Geos* and other productivity titles seem to be more popular now than ever. So, in Australian Commodore and Amiga Review, our Geos and C64 column will continue! Check out the CMD-Hard Drive review in this issue.

For the Amiga this month, we've compared some of those new program versions in the land of WYSIWYG wordprocessing. The three we've examined handle bit-mapped fonts and provide a full graphic interface. There are many other wordprocessors which provide in-between solutions or more text-based interfaces. These will be the subject of other comparisons in the future. Once again, we welcome contribution of any description.

I should mention that due to the large number of correspondence and contributions we receive we cannot personally respond to every letter - however we are trying to improve that, so please be patient with us.

Edwin Huang, Commodore's well-liked marketing manager, has moved on to spend more time pursuing his passion for music. Rumour has it that he will still be involved with the Amiga industry - he always was a true Amiga fan.

Andrew Farrell

GVP Announces a Technological Breakthrough...

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- **NEW *FAAASTROM*™ SCSI Driver** offers optimum performance and includes such features as:
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  - ✓ Removable media drive support. Automatically senses cartridge changes and informs AmigaDOS, ensuring safe and reliable use of removable media SCSI drives.
  - ✓ Allows Direct AUTOBOOT from Fast File System Partition.
- **New INTUITION COMPATIBLE SCSI installation** and "tuning" utility included. Major features include:
  - ✓ ICON and gadget based INTUITION interface.
  - ✓ Bad Block Remapping of hard drives.
  - ✓ Auto or manual hard drive partitioning and AmigaDOS formatting.
  - ✓ Read and modify existing RDB parameters on hard disk.
  - ✓ Simplest and Easiest SCSI installation in the industry.
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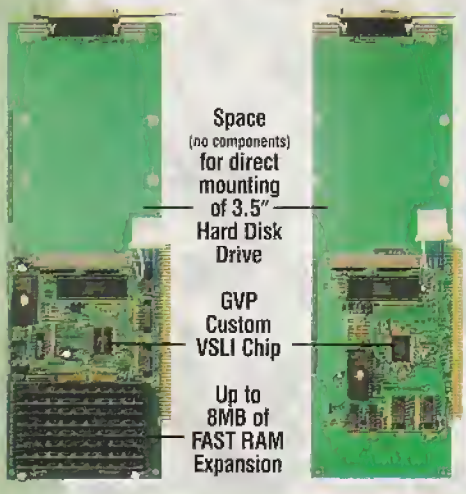

Hard-Disk-Card

GVP's New *FAAASTROM* SCSI driver and installation software is also available as an upgrade kit for GVP's original IMPACT SCSI controllers, for ONLY $89.95. Offers major performance increase over previous GVP AUTOBOOT EPROMs.

New Series II 48MB Removable media hard disk drive. GVP now also offers the NEXT GENERATION removable media hard disk drive which offers increased capacity (48MB formatted) and major technological advances in cartridge air flow filtering design and robustness. Call for details.

SCSI TIMES 1990

The ULTIMATE Trade-Up Offer???

GVP today introduced its new Series II product line and announced a bold new trade-up program, which is certain to further bolster GVP's dominant market share in the Amiga hard drive market.

Details of GVP's new TRADE-UP program are as follows:

- For $199 plus $6 for shipping (Aus only) end-users can trade-up to the new GVP Series II SCSI "Hard-Disk-Card" (without drive) by simply sending in their present SCSI controller (from ANY manufacturer) together with a money order or certified check, payable directly to GVP.
- All trade-in controllers must be sent to GVP FREIGHT PREPAID.
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- For an additional $89, existing controllers can be traded-up to the new Series II "Hard-Disk + RAM-Card," which includes the 8MB FAST RAM expansion capability, populated with ZERO RAM.

"Let's Standardize"

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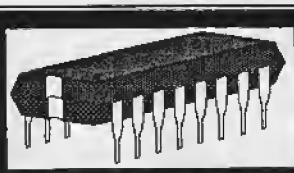
Ram Rumbles



Commodore in the Media!

Once again our loyal readers have been busy spotting Commodore in all sort of places. To you people who have continued to send letters of sightings, we thank you from the bottom of our processors.

➦**Sixty Minutes** - our first spotting this month comes from Angelo Orsini of Mildura. According to our eagle eyed observer, *Sixty Minutes* ran a story on a man called Terry Wiles (we think), who sadly has no arms or legs. He does have feet and toes - enough to operate the Amiga 500's mouse and keyboard, which came into clear view during the story. As Angelo says, "it just goes to show, anybody can use an Amiga." It's great to see people with physical disabilities having a go at all kinds of things!

➦**Quantum** - Mark Cowan of Newcastle reports the weather analysis program showed on *Quantum* recently was spectacular. The pictures were ported to an Amiga 2000 were they were replayed at 25 frames per second. Later in the show an Amiga 500 did the same job in the studio. Impress stuff!

➦**C64 on Newsweek** - Tricia Scott of Julia Creek informs us *Newsweek* recently showed a C64 doing wordprocessing. Look like our old friend is still getting a bit of publicity after all!

➦**Multiple Spotting** - one of our readers, a Mr Allan Mamo of Wentworthville, has been very busy scrutinising television for the Commodore logo. On channel two, Allan saw during a segment on communications on an education show, the screen from a 1084S displaying a screen from Megadisc four!

In the movie *A night on the Town*, in Brett's bedroom we see a C64c in the scene where the babysitter comes in to say goodbye to Daryl, his younger sister and friend.

Last of all, in Wentworth Mall, Wentworthville, a hairdresser is using what looks like an Amiga (a 1084S is the only hardware in view), to drop hair styles over your digitised face! Sounds great...

➦**Application of the Month - Amiga does TV Cartoons!** - During a visit to Adelaide television station AD-10, Roger Blieschke of Elizabeth Vale, SA noted a room marked Animation. Closer inspection revealed the Amiga 2000 was a major part of the setup along with digitising software and assorted software. Although primarily used for experimentation, the Amiga along with *Fantavision* has been responsible for the production of the children's cartoon *Bubble Boy*. The production is shown nationally - any reports from readers who have actually seen the end result would be much appreciated.

Thank you to all who contributed again! Happy spotting...

Police clamp down on pirates

Action against piracy is increasing. The following report appeared recently in the Advertiser:

"Federal Police have cracked a major computer software piracy racket operating in Adelaide. Three men are likely to be charged with copyright offences as a result of the operation, which has interstate and overseas links. In the past month, detectives have seized five computers and thousands of floppy disks in separate raids on Adelaide homes.

"The investigations began six months ago after Federal Police in Adelaide received information about a group pirating personal computer software.

"The officer in charge of the investigation, Detective Constable Rick Irvine, said the Adelaide group has been obtaining the programs from overseas pirating groups and copying and distributing the illegal material within Australia.

"Det. Irvine said the programs were distributed within a closed community of users throughout Australia. Such programs vary in cost from $40 to $600."

Pirates advertising charged!

Questor, a large distributor of entertainment software have also been busy chasing the pirate problem. On 25th May 1990 a search warrant was executed by members of the Australian Federal Police on a premises in New South Wales where a large quantity of copied computer software for which Questor has Australian distribution rights was seized as a result of this action.

The "pirate" was interviewed by the police and admitted copying and advertising for sale the infringing copies. He was subsequently arrested and charged, and appeared in the Wollongong Local Court where he pleaded guilty.

The offender was fined a total of $1,100 and an order was made for the destruction of all material that infringed copyright.

Piracy doesn't pay!

Update

INCREDIBLE!!!

Even though I know that AMOS is without doubt the best product ever released for the Amiga, I have been totally astounded by the quantity we have already delivered in Australia. Membership in our Club is already over a thousand and I have yet to have a call from an AMOS purchaser who has not indicated just how thrilled they are with this new product. I honestly believe that if you own an Amiga but don't own AMOS, then you are only getting half the value that you should be from your Amiga. We already have some 14 PD disks that have been written for AMOS, and I am sure that there are many more to come.

I guess this is as good an opportunity as ever to remind you that another way to get a lot more out of your Amiga and its peripherals is to get hold of any of the great range of Abacus books for your machine. These include such titles as *TRICKS & TIPS*; *AMIGA DOS INSIDE & OUT*; *DISK DRIVES INSIDE & OUT*; *DESKTOP VIDEO*; and many, many more. If you don't have our full list of these Amiga books together with our very wide range of Amiga software, then please ring us on (02) 748 4700 or 008 227 465 if you live outside the Sydney area.

For you C64 owners, we also have a number of books including *PEEKS & POKES*; *ADVENTURE GAME WRITERS HANDBOOK*; *TRICKS & TIPS*; etc; and you too can call in to become a member of our Up-date Club on the above numbers.

By the way, we have recently released some great new games and business products for the two machines - *REMOTE CONTROL*, *MAZE MANIA*, *SECURITY ALERT*, *CERTIFICATE MAKER*, and *GEO PUBLISH* - (a most sophisticated desktop publishing programme) for the C64. For the Amiga we have *DATASTORM*, *VORTEX*, *HYPERACTION*, *PARIS/DAKAR*, and the brilliant new *"GRIDIRON"*. For those of you with naughty minds (like mine I admit), we also have *SEX VIXENS* and *PLANETS OF LUST*.

AT LAST!! For those of you who have waited so patiently the great news is that we have finally got more stock of the CAMERON Scanners, both Black & White and Colour. However, we didn't get that many, so if you do want to get hold of one, I suggest you place your order with your local retailer A.S.A.P.

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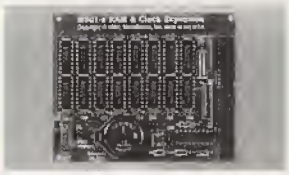

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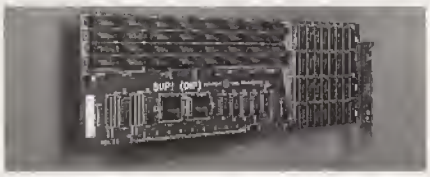

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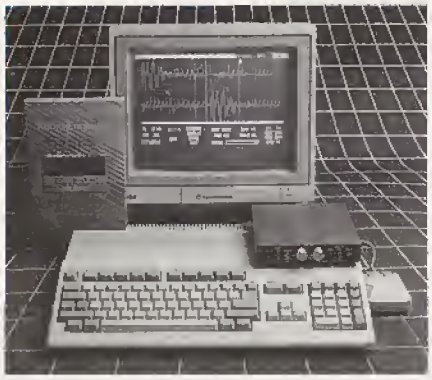

Peter Norman, the author of Audiomaster 1 and 2 has gone a step further with the writing of Audio Engineer. This outstanding Australian product now includes the following features :-

- MultiLoop facility - like a digital sequencer
- Compression of sample files
- Stereo oscilloscope display
- Echo, delay and flange effects in real-time
- Hand draw wave forms
- Special effects
- Use up to 8MB RAM for sampling
- A full screen CD player - load and play up to 20 Sound files
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Notepad

Just Imagine! - Silver Turbo

Imagine is the next generation in rendering and animation systems for the Amiga. With *Imagine*, a complete rewrite of *Turbo Silver*, it will be possible to perform functions on the Amiga that have until now been left to much larger platforms. With the use of 24 bit rendering techniques, Amiga owners can now compete in the world of professional animations at much lower cost than has been available to date.

Features include Full QUAD View Editor which allows each view to be expanded for full screen use as well as zoom in/out functions. Forms can manufacture an object from the cross sections of the different isometric view of any object by the use of 2D drawings.

The Detail editor allows you to manipulate in great detail any and all of the faces, edges and points of each object created in Forms or Detail. The Detail editor also allows the use of Boolean Math functions to create even more unique and interesting objects.

The Animation Editor allows you to have complete control over every aspect of the animation capabilities of the system. To date the majority of systems allow for only simple "Geometric" movements. *Imagine* goes many steps further in the inclusion of new techniques providing life like motion.

Cycle creation and the use of a simple stick figure with joints and segments, the user can create human like qualities using true Key Cell function. All one has to do is to move the segments where they should be in the next chain of the movements scheme and *Imagine* fills in all of the gaps or "In-be-tweens". This technique is much like those used by animation studios which incorporate hundreds of artists to perform the see functions.

Imagine treats each object as an actor, each set of animation cycles as a movement and puts all of these features together on the STAGE. The metaphor of using the Theatres as the basis for *Imagine* makes using *Imagine* much easier. The main problem with most systems that use 3D as their basis is the complexity of the user interface. In the past the user could spend hours of time just creating a simple Walk Cycle, moving this actor around his 3D space was even more difficult.

Imagine breaks the bounds of normal movements techniques by letting actors move around the stage, interacting with props, other actors and the 3D world at large. The user does not have to worry about cell count or any other aspect of the animation. Simply tell the actor where to go and what cycles to use, *Imagine* does the rest.

Object features include morphic change, animation of all attributes of the object including colour, specularity, texture etc. Full IFF wrapping capabilities both in 12 and 24 bit mode are also included as are texture mapping and complete control over colour specularity, roughness refraction and reflection size/scale.

Editor features include easy access to any and all points, faces and edges and single IFF bit plan extrusion. Real time rotation, scale and movement of all objects and zoom in/out in any screen are also available. Rendering methods are 12 and 24 bit, colour or black and white wire frame with hidden line removal, primitive solid modelling, complete solid modelling and full trace modelling. Watch for *Imagine* in Commodore dealers over the next six weeks. For further information contact Computermate on (02) 457 8388.

Amiga City

A new importer of Amiga products has opened his doors in Australia. Amiga City will be distributing Tangent 270 - Clip Art; Central Cost Software - Mac-2-Dos, Dos-2-Dos, Quarterback; Micro Momentum - Various Software; Moonlight Development - Mean 18 (Golf) Course Data Disks; Silver Software - Various Software; ASDG Incorporated - Dual Serial Board.

Any enquiries to Ian Granshaw, Amiga City, Box 6069, Townsville Mail Centre 4810 Australia. Telephone (077) 72 3372.

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Contact $60 *Memory-resident contacts manager: phone dialling, address printing (incl. PostScript), clipboard support & A-Rexx port.*

CalcKey $30 *Memory-resident calculator; Type facility to send results directly to your application; has binary, hex, boolean, square, sqrt etc.*

ASDG

Professional Scanlab $1400 *interface card, cable & software for Sharp high resolution colour scanner.*

Dual Serial Board $355 *connect & use 2 serial devices at once.*

RESEP *24-bit colour for PPage* $80.

Facc II *disk accelerator* $45.

Cygnus Ed *fast text editor* $135.

The Art Department $120. *Fast new 24-bit image processing software.*

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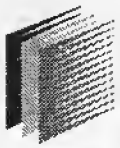

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Up to 16 instruments can be held in memory at one time. You can compose drum and rhythm tracks, and then add synth melodies on the remaining channels.

Samples can be played polyphonically over three octaves from the Amiga keyboard or MIDI instrument.

As you record a track, *Quartet* plays back the other three channels simultaneously. You can free up any sound channel so that as music is being played you can accompany it with your chosen sample, via MIDI or from the Amiga keyboard.

Watch for a full review soon. Distributed by Computermate (02) 457 8388.

MS-DOS and Apple developers look at the AMIGA!

Last Christmas, Commodore embarked on what was the most ambitious television advertising campaign yet for their Amiga computer. The TV commercial was, to say the least, a testament to the Amiga's versatility and quality, because it was produced entirely on the Amiga.

The commercial had a dramatic and rather embarrassing effect. Immediately before Christmas, it was almost impossible to buy an Amiga computer in Australia.

However, that is only half the story. There was another quite unexpected result. The broadcast quality graphics and animation obviously had an impact on many software developers.

Commodore report several major MS-DOS and Apple software developers calling the company asking about market size and installed base of the Amiga. They may be surprised to see just how good the software we have is - but it would be nice to see some of the traditional software players in the Amiga market.

Disney launches CEL Animator

The *Animation Studio*, newly released from Disney Software, includes three disks and all the software tools you'll need to create exciting cel animation. Judging from the included demo reels, the package is very powerful, and totally capable of producing some very professional results. Good solid documentation and the Walt Disney name should help sell a lot of studios to animators.

The disks included are the Studio Disk, which provides sample animation including a library of cartoon sound effects. The Morgue Disk includes actual drawings and animations cels from Disney classics. The Demo Disk features a full colour scene of Donald Duck to illustrate the powerful features of this software. Available soon through Computermate (02) 457 8388.

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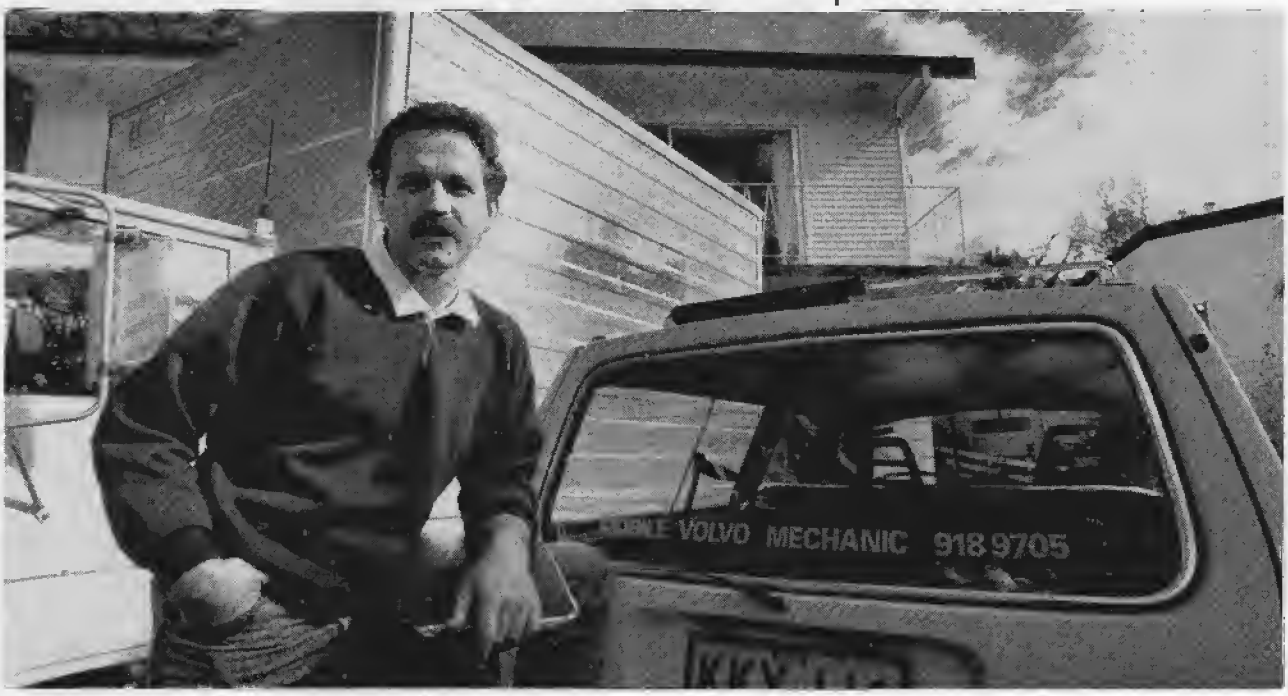

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Job

This handles labour, purchases, materials and subcontracts. It provides automatic costing and charging, letter or commercial style bills.

Sales Book

This tracks full or partial payments and automatically updates inventory and ledger accounts. It prints invoices, credits and statements, and offers an optional sales message on customer invoices.

Inventory Book

This offers three price scales with automatic update facilities. It uses the weighted average cost method and automatically posts to ledger accounts.

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Excellence! V2.0 released

User suggested refinements, increased speed and reliability are to be found in *Excellence!* V 2.0.

Typing speed is increased to 175 words per minute. A new feature has been added, Virtual Memory, which allows documents larger than available system memory.

The dictionary now contains more than 140,000 words including Legal, Medical, Scientific, Technological, Geographical, and Biographical supplements and can be edited using the Spellmate maintenance utility. The Guess option is improved and is very accurate, even with phonetic spellings. The Thesaurus contains more than 1,400,000 words. Definitions are now displayed for each sense of the word. Also, the Hyphenation feature has been enhanced.

User changes to the Page Setup Requester and the Print Requester can be saved as user defined defaults, overriding the program's internal defaults for these requesters.

NLQ Print Quality has been enhanced and now prints graphics with text. It uses the printer's internal default font for text, switching modes to print graphics. Portrait and Landscape printing orientation in Graphic and Postscript Print Qualities is supported from the Print Requester. Colour PostScript is also now supported.

Graphics are now stored in Fast Memory and moved to Chip Memory when needed. This allows an almost unlimited number of graphics to be incorporated in a document.

Inserting an *Excellence!* document into a document now retains headers, footers and footnotes and forced page breaks if these are present. The text of headers, footers and footnotes is now cut, copied and pasted along with the text in which it is embedded for more complete editing control. A new feature appears on the Edit menu that sorts highlighted paragraphs in ascending or descent order.

ASCII text files can now be inserted into an *Excellence!* document. As ASCII text files were opened, tab characters were stripped and replaced by spaces. Tab characters are now preserved when text files are opened.

The Index Generator has been modified to exclude variations on a marked entry.

The program is supplied on three floppy disks and will work on a one meg, one drive Amiga although the recommended configuration is three megabytes of RAM and hard disk.

The upgrade will be made available to registered users for $59.95 (AUS) (plus a shipping and handling fee of $5.00 (AUS).

Excellence! V2.0 is available from Computermate Products (02) 427 8388.

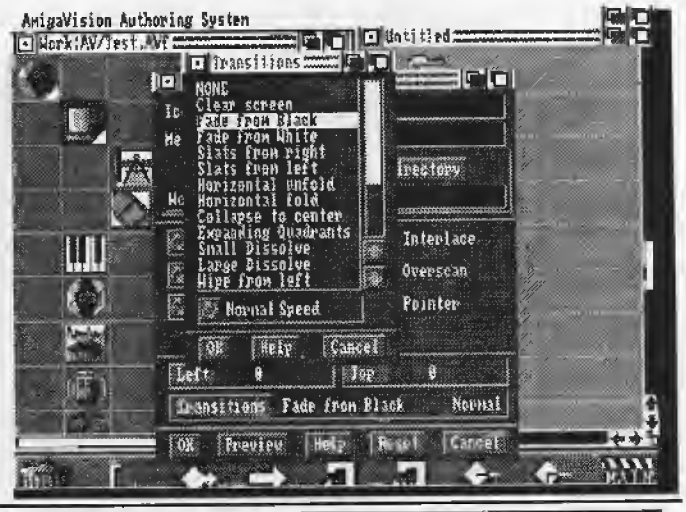
AmigaVision available

Commodore are supposed to be bundling *AmigaVision* with all A2000's any time now. In the meantime, stocks of this so-far well received product have arrived (see preview in our July issue). In essence, *AmigaVision* offers the ideal environment to develop computer based training, interactive video, and simple multi-media presentations. Several local developers have already designed educational courseware for Australian geography.

No programming experience is necessary to create hit boxes or gadgets in the various shapes and sizes.

Features included Workbench, CLI and ARexx program support, and the ability to combine graphics, animation, digitized sound, speech synthesis and videodisc control into one program. A dbase III compatible database manager is included.

Available from Computermate Products (02) 427 8388.



MAST launches A500 4MB expansion

Memory and Storage Technology has released Quatromegs, a new 4mb Internal Memory Board for the Amiga 500. The board is user installable in the A501 slot underneath the computer. It provides a battery backed clock and calendar and allows increased memory to as much as 4.5mb.

The Quatromegs is fully compatible with both the 512K (Fat) and 1 MB (Super) Agnes chips. Using a plug-in memory board that installs in the A501 slot and a daughter board that installs in the Gary socket has made the full 4MB possible.

The unit comes with a 12 months warranty. Retail price with 2mb $589.00, with 4mb $869.00. Available from Memory & Storage Technology (M.A.S.T.), 19 - 21 Buckland Street, Broadway, Sydney. Telephone (02) 281 7411.

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Page stream II	$379	Public Domain	$1.75

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WYSIWYG Show Down

by Andrew Farrell

New arrivals on the Amiga WYSIWYG wordprocessing scene would have to meet a long list of features to match the latest upgrades to the big guns. *Excellence* version 2.0 has arrived, and *ProWrite* 3.0 is out. *Pen Pal*, the newest market entry arriving late last year, remains unchanged since its PAL upgrade.

How do these three popular wordprocessing machines compare, feature for feature? From the dot-matrix printer the results churn out, and often it is this criteria by which products are judged. Of course, how easily you can obtain the end copy is just as important. So let's examine both these areas now in our head-to-head wordprocessing comparison of the three WYSIWYG big guns.

What you get

Off the shelf, *Excellence!* looks every bit the heavyweight it is. *ProWrite* has a slick, sophisticated marble print on the box which gives the feeling of quality and class. *Pen Pal* dazzles with an array of documents containing graphics and fonts which make it look like one very powerful wordprocessing vehicle.

Inside the box, things begin to change. *Pen Pal* has an excellent ring bound manual, not far short of an inch thick. The layout is easy to follow, with plenty of examples, and easy to locate chapter headings on the right margins. The ProWrite manual is a little smaller, has fewer graphics and is not as well referenced. *Excellence!*, being a bookshelf package, is documented in a three ring binder, with protruding chapter headings for speedy location of subjects. In practice a three ring binder can be tricky to handle. Pictures liven up the explanations. Probably the only major criticism in the documentation department would have to be levied at *Excellence!* which, after so many upgrades and alterations, seems to suffer a little from discontinuity.

Pen Pal and *ProWrite* come on two disks, and Excellence on three. Version 2.0 of *Excellence!* is also available as an upgrade which includes three new disks and a manual addendum. It is easy to see the advantage of the three ring binder when you can make an upgrade so easily, however it is a shame that instead of replacing the pages which needed altering, Micro System Software have opted to have you refer to the Addendum for changes or make the alterations by hand.

Installation

If you have a hard disk, your wordprocessors may need to be installed. Apart from actually copying the various files and directories from the original disks, you normally need to install drivers and fonts and alter your startup-sequence.

New Horizons, the publishers of *ProWrite* need to be congratulated for keeping installation simple and improving on support for font and printer driver installation. To place *ProWrite* on your hard drive, you simply move the program, dictionary and thesaurus icons to the appropriate drawer. As long as all three are in the same drawer all will work fine. Now that is how it should be. Extra fonts, and printer drivers are handled using a simple utility provided on the system disk called System Mover. Commodore should have included this program as part of Workbench!

Excellence has gone to the other extreme. An install program is provided to automatically place the relevant files and fonts in the right place. Although gadget and requestor driven, so much power is offered that first time users are likely to be over-awed by the path names and file titles which can be edited. If you know what you're doing, this type of install program is great. If not, it can be a giant hassle. The manual only confuses the issues further with convoluted explanations and garble about device names.

Pen Pal is a bit clearer than *Excellence!*, but still requires the user to understand device and AmigaDOS. This type of information can easily be passed to an install program in the fashion used by Gold Disk with *Professional Page*. They have arranged matters so that you simply click once on the install program and then with the shift key held down, double click on the hard disk drawer you wish the program to be installed in. Much simpler.

Hardware requirements

We found all three wordprocessors required one megabyte of RAM to run peacefully. You may get them to work in less, but not reliably. *Excellence!* is no longer available in a 512K version, and the manuals all recommend one megabyte. *Pen Pal* uses the most RAM (about 600K depending on the buffer size you select), followed by *Excellence!* (around 500K) and then *ProWrite* (350K).

You'll need at least two floppy drives or one floppy and a hard drive. As the *ProWrite* manual puts it, "we strongly recommend you also have a printer." We reckon you'd figured that one out.

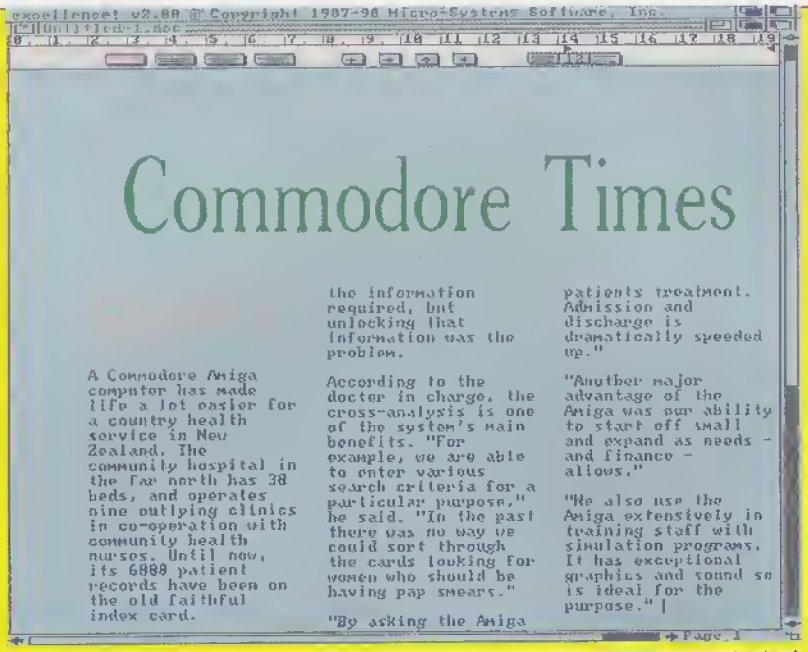
We tested all three wordprocessors on a 68030 based system and found that *Pen Pal* seemed to hang every so often. *Pen Pal* was also a little unstable on the 68000 based Amigas. *Excellence!* has the occasional problem, and *ProWrite* seemed to behave itself the most, with little or no hassles reported.

User interface

All three user interfaces are gadget and menu driven. *Pen Pal* has a large number of tools for adding boxes, lines and other decorations to your documents. It also has a unique active pointer which changes to indicate the function of the gadget currently pointed at. However, *Pen Pal* also lacks a few basics which the others have such as selecting justification from the ruler - both *ProWrite* and *Excellence!* make quick work of adjusting the setting of a particular highlighted area whereas *Pen Pal* requires you to enter the pull-down menu system. *Pen Pal* was also less intuitive in a few other basic functions, but made up for this in things like margin settings, where the margin can literally be dragged into

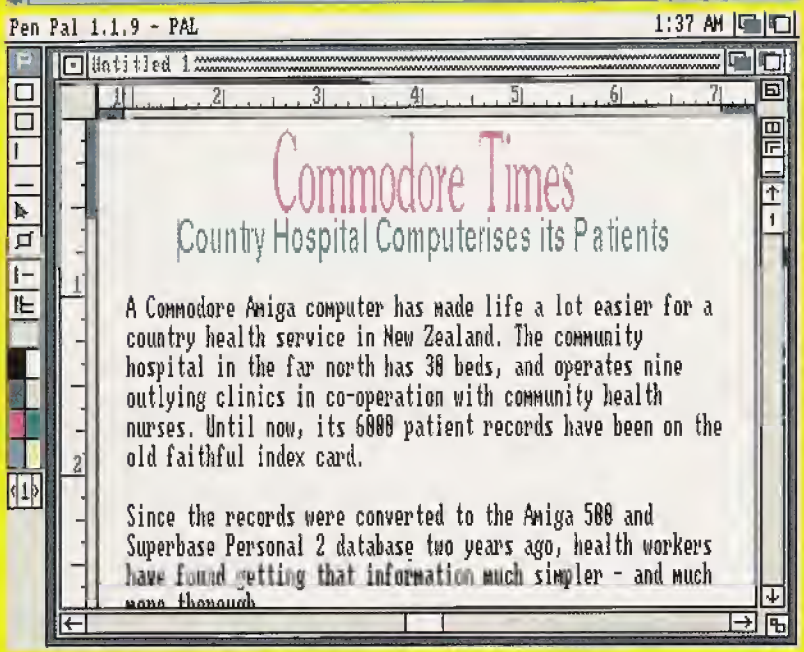
cont. on page 17

Feature Guide	Excellence!	Pen Pal	ProWrite
WYSIWYG			
Supports Amiga Bit-mapped Fonts	Yes	Yes	Yes
Displays NLQ Equivalent in true proportions	Topaz 11	unknown	Yes
Include IFF Graphics in Documents	Yes	Yes	Yes
DISPLAY			
Maximum and Minimum Colours	2, 4, or 8	8	8
Interlace mode supported	Yes	Yes	Yes
EDITING			
Maximum Open Documents	Memory Limited	4	10
Undo option	Yes	Yes	Yes
Revert to Last Saved	Yes	No	No
Keyboard Short-Cuts	Yes	Yes	Yes
Macro Keys	Yes	No	Using AREXX
FONTS			
Number supported	250	200	unknown
Maximum Size	-	-	-
Colour Support	No	Yes	No
OUTPUT			
Preview Mode	Yes	No	No
NLQ + Graphics	Yes	Yes	Yes
Postscript	Yes	No	Optional
Landscape or Portrait	Yes	No	Yes
Print Merge	Yes	No	Yes
Mail Merge	Yes	Yes	Yes
FORMATTING			
Headers	Yes	Yes	Yes
Footers	Yes	Yes	Yes
Footnotes	Yes	No	No
Columns	4	0	5
Flow	Parallel	n/a	Parallel/Snaking
TEXT			
Superscripts	Yes	Yes	Yes
Subscripts	Yes	Yes	Yes
Variable Line Spacing	Yes	1, 2 or 1 1/2	Yes
Date & Time Stamp	Yes	Date	Yes
Hyphenation	Yes	No	Yes
GRAPHICS			
IFF	Yes	Yes	Yes
HAM	No	Yes	Yes
Scaling	Yes	Yes	Yes
Auto-Flow Around	Yes - One Line	Yes - FULL	No
Ragged Left or Right	No	Yes	Yes - Manual
SPELL CHECKER	140,000 Words	100,000 Words	100,000 Words
As you type	Yes	No	Yes
User Defined	Yes	Yes	Yes
THESAURUS	1.4 Million Word	No	300,000 Word
GRAMMAR or STYLE ANALYSIS / SUMMARY	Yes - FULL	Summary	Summary
AREXX	No	No	Yes
SPECIAL FEATURES			
Glossary Function Keys	Yes	No	No
Generate Index or Contents	Yes	No	No
Forms with Fill In	No	Yes	No
Paragraph Sorting	Yes	Yes	Yes



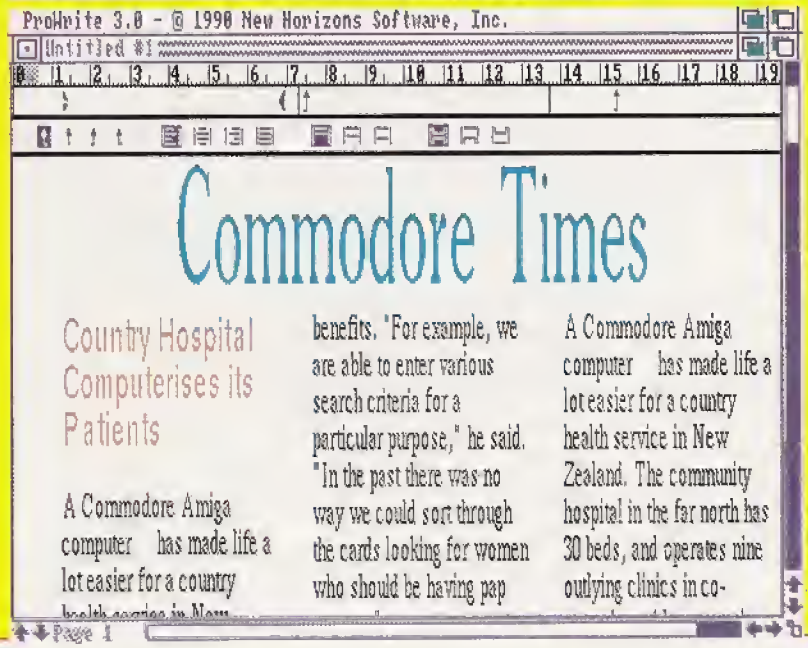
Excellence 2.0

Despite the odd bug, Excellence! is a very powerful WYSIWYG machine which when combined with the amazing thesaurus, Postscript power and style analysis, represents good value.



Pen Pal

By far the most graphics capable wordprocessor around, with some clever screen gadgets - and a smart pointer - which makes it easy for beginners. However, it is very memory hungry and lacks solid WP features.



ProWrite 3.0

Solid reliability, good useful features, poor graphics support, but a good all-round performer in most other respects. ProWrite also offers optional Postscript output.

place using the mouse.

ProWrite has a clean easy-to-follow more professional look. *Excellence!* is also fairly sharp, with version 2.0 having a number of user interface improvements including very speedy pull down menus. *ProWrite* is also fast, with *Pen Pal* clocking the slowest pull-down speeds.

Keyboard short cuts make editing much smoother. All three programs have short cuts for most edit and style functions, basic file and search or summary operations.

Important to all wordprocessor users is the speed at which you can edit, and the amount of support for moving about a document. All three programs have the standard Amiga slide bars, sizing tool and scroll arrows - although *Pen Pal's* screen looks a lot more exotic, using its own variation on the usual clean look. This deviation will therefore not support Workbench 2.0 enhancements, and leads one to wondering what else they may have circumnavigated for the sake of uniqueness.

Highlighting a block of text using the mouse is fast in all three packages. Double clicking a word will high-light the word in all three, and clicking a third time will select a line or paragraph in *Pen Pal* and *ProWrite* respectively. Of course, to become truly proficient, keyboard editing needs to be available to move around your document by word, paragraph and sentence.

Excellence! supports movement by character, word, line, window and document. *Pen Pal* handles all that except the window movement with the addition of sentence and paragraph jumping - very sensible. *ProWrite* handles all but paragraph movement.

Speed wise, all are fast, with *Pen Pal* dragging the chain a little. *ProWrite* 3.0 and *Excellence!* 2.0 are vastly improved in this area. They are now both good enough for even the fastest typist to use comfortably.

Document and file requestors

ProWrite enables eight documents to be open ready for editing. *Pen Pal* offers four and *Excellence!* is limited by memory. In each case the new document was stacked down the screen enabling access to previous grab bars. A new ruler was always opened too. Obviously, the limitation of open documents may vary depending on available memory and the contents of each document.

The *Excellence!* file requestor displays directories and then files in a sorted list. You can cycle through the various volumes and four different file extensions are handled. The requestor cannot be moved around the screen once open on all but *ProWrite*.

Pen Pal has a very unusual requestor, divided up with lines and boxes all over the place. Two internal file extensions are handled as well as a no-extension file option. Directories and files are sorted as a single list. The best feature is that a list of all mounted devices appears which you can click on to select a drive - the other packages insist you cycle through each available device - painfully slow on a floppy based system - and it is easy to

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LEARN HOW TO BACK-UP
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MAIL ORDER FORM
BANKCARD/MASTERCARD/CHEQUE/POSTALORDER
NAME: .....
ADDRESS: .....
PHONE: .....PC: .....
PAY BY CHEQUE: ..... B/C: ..... M/C: .....
P/ORDER: .....
CARD NO: .....
EXPIRY DATE:.....
SIGNATURE: ..... DATE: .....

shoot past the device you want on a hard disk based set up.

ProWrite divides the whole display up best, and is probably the simplest to use requestor for the beginner. *Excellence!* is more powerful and best for the more advanced user.

Setting up your page

This is a vital part of using your wordprocessor. Wrong settings can mean your page will not print correctly, will not fit on the page, or may creep up or down a line or more over multiple pages.

ProWrite and *Excellence!* have a single menu for page setup with *Excellence!* offering the most control. In both packages you can also select up to five columns and with an editable gutter width between them all - ideal for newsletters! *Pen Pal* does not offer columns. Margins are set using on screen gadgets.

All three programs handle headers and footers, with *Excellence!* also offering footnotes. *Pen Pal* has the easiest editing of these areas - you just click above the top header margin and start typing. The other two use a select view option to select which area you edit.

Fonts

All three programs handle any Amiga bit-mapped font. *ProWrite* will also work with its own special screen fonts designed to look exactly like the variations on most in-built NLQ printer fonts which are available. *Excellence!* sticks to topaz 11 for NLQ work, however it has full support for Postscript output - something which *ProWrite* only offers as a separate option which then cuts out a lot of other useful formatting facilities. Although *Excellence!* included Postscript fonts look horrible, you can also use the Adobe or Gold Disk metric fonts. A small conversion utility facilitates this, and the results are fantastic, making *Excellence!* the only full Postscript wordprocessor on the Amiga.

Excellence! displays all its fonts as one giant list. This can become cumbersome if you have hundreds of fonts on your systems - like I did. The maximum number of accessible fonts is limited by the most options which may be displayed in a pull down menu (250 including point size). This can mean that not all the fonts listed in the pull-down are accessible - however this is only a problem in extreme situations. The trick is to isolate fonts you wish to use in *Excellence!* and put these in a separate directory which you assigns FONTS: to before using *Excellence!*. If you alter the Adobe or Gold Disk metric files you'll need to do this anyhow.

Pen Pal (up to 200 fonts) and *ProWrite* access their fonts using a requestor like a file requestor. This method is a little slower - although with *ProWrite's* font short-cut it is quite intuitive.

Graphics

Support for IFF graphics varies immensely. *Pen Pal* offers the world, whereas *ProWrite* barely scrapes through. *Excellence!* gets by with a halfway effort - which is enough to make it usable. Best results in printing graphics require the right kind of graphics - if you're printing black and white, use black and white images.

Pen Pal converts IFF's to a display format that is supposed to be close to what the end result will look like. Text can be made to flow left or right around the graphic, with either ragged or straight margins. Graphics may be sized and positioned easily. Overall, if graphics are high on your list, *Pen Pal* wins by a long mile.

Excellence! will allow only one line of text next to a graphics. The image may be sized. The one line flow around is automatic. In *ProWrite*, things get really bad. In essence, you've got to make text go around the graphics using TABs and margin settings - very clumsy. So, whilst this takes a lot more work, the end result can end up as good as *Pen Pal*.

Spelling/Thesaurus

Excellence! is king of the spell checking world. It has a 140,000 word spell checker and 1.4 million word thesaurus. ProWrite is close behind with a 100,000 dictionary and 300,000 thesaurus cross-references. *Pen Pal* does not have a thesaurus, but has a 100,000 word spelling checker.

All three programs handle both phonetic and transposed spelling problems, although *Pen Pal* does require an extra step to reach the amended word. In the thesaurus department the gap is a lot wider. Although *ProWrite* offers a very long list of synonyms, divided into grammatical areas, *Excellence!* provides a full explanation of the word, along with a long list of synonyms and antonyms - a real educational program! Furthermore, *Excellence!* offers complete grammar and style analysis too... the complete writer's tool.

Printing

I tried producing a simple three column newsletter on each wordprocessor. *Pen Pal* stopped dead a few times, and couldn't handle the three columns, although the extra graphics made for a few impressive pages. *Excellence!* and *ProWrite* were both on par, both handling multiple columns, placing the newsletter titles as large as required in the header and printing out comparative results at the end of the day.

Excellence! was able to go the step further to Postscript output, and offers superior features in areas such as generating index and contents lists automatically. With a little trial and error most print problems were overcome, although there seemed to be some bizarre solutions to some of the problems we ran into more on that in future issues as we take a look at getting the most out of each package.

Summary

All three wordprocessors would make their owner very happy. Keep in mind that for purely text preparation with no formatting or for text preparation for desktop publishing, you would be best not to use any of these three, but use instead *Transcript* - a purely text-based word processor from Gold Disk. However, where WYSIWIG formatting is important, and the extra editing facilities of Excellence! would come in handy, it stands alone as the heavyweight all-round wordprocessor. For a cheaper solution to the same requirements, with a pleasing look and feel and absolutely rock-solid reliability, *ProWrite* is the answer.

If you're trying to produce a graphics orientated publication in colour, *Pen Pal* has a lot to offer - but it is a little unstable and somewhat cumbersome over some menu areas. For an extra $100 you could buy *Pagestream 2.0* and enjoy far more sophisticated graphics and much better quality output. There are a few nice redeeming features, such as the in-built list manager, form editing capabilities and colour font support. These features are useful, and make *Pen Pal* good value for money. So, it's up to you. To help you decide better, we've prepared an exhaustive comparison chart.

System 3 Accounts

by Kevin Carpenter

I buy gadgets. I go to Hong Kong and Korea a couple of times a year. I scour trade shows and derelict factories for bits and pieces that handymen and high powered executives will buy. They hide them in garage drawers to collect dust. I barter with wizened Asian gentlemen and hard-nosed Malay factory owners to get good prices.

American Express once put one of my gadgets in their winter catalogue. It is now a mandatory Yuppie possession.

After two years of trading I have a stock list that runs to 327 items. I have about 75 regular customers. Until recently, I have had 24525 (327 x 75) headaches. I needed a good accounts program. I bought *System 3*. Why? I will tell you.

When I gave up my job packing ping-pong balls to become an entrepreneur my wife refused to do my accounts. Unperturbed I went to Penfolds and bought a foolscap Warwick Analysis Book and began a long series of late nights. I also began looking for an accounting package that would suit my needs.

I wanted a program that would take most of the tedium out of stock control. I needed something that would greatly reduce the time I spent preparing statements and invoices and maintaining accounts. Most important of all I needed to know my cash flow.

As a side point I wanted to have the option of entering special categories like consulting time, labour, postage and packaging etc.

Of paramount importance I wanted a program that was simple. A program with a manual the size of comic book, not the *Encyclopedia Britannica*.

I bought *System 3*.

This promised to be the answer to most of my dreams. And it was only the cost of two Ornate Hand-carved Oriental Chopstick-holders, it did not break the bank.

It was simple. *System 3* comes on one disk. Takes two minutes to install. Can hold up to 999 stock items, 99 customers and 99 accounts.

System 3 disk icon opens to reveal two modules, Sales/invoicing and Cashflow. Getting started with Sales/Invoicing is as easy as opening a *Transcript* window. On screen appears a blank workbench window with a menu bar. The options are, Projects, Options, System, Transactions and Report.

Starting off I chose the Project - Create a New File and left the computer for about 45 seconds while it did the necessary I don't know what (or care what)! on my new data disk.

At the return of the arrow I could start adding stock records. Each stock item can be given a code. Indeed it is highly valuable if not imperative that this be so, as I discovered. Once your stock or even a small portion has been entered you can go to making money. However, this requires customers.

Creating Customer Accounts. Again everything is simple and one merely fills in the blanks. Each customer can be given an account number (again you will see why this is so good).

Next, I entered the Company details. My company. This is what will appear on your statements, accounts and invoices. So be careful in case you let the wrong people know too much about yourself. If you run several companies or operate under different trading names it will be best to set up a data file for each.

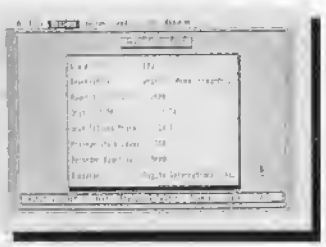
Now having both stock and customers it is a simple case of bringing the two together. Dealers ring in or fax their orders through the week. On Tuesdays and Thursdays, after macrame classes, I bundle all their orders and the courier man picks them all up. Before *System 3*, I spent the rest of the week writing out my invoices or trying to get my $799.00 accounts package to do this for me, and failing.

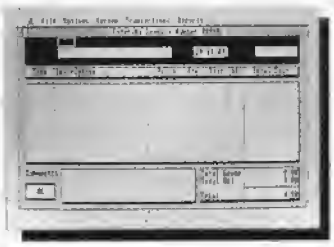
To my delight *System 3* prints each invoice as it is typed in from the order. The invoice can be used as a delivery docket as it has provision for an address to be included on the printout. Now I can send invoices with the orders. I save about $18.74 a week on postage stamps.

Of course at least once a week someone wants a price list. To get one of these I no longer have to photocopy a hurriedly amended version but now simply call up a price list from Report and select printer for the output. For over the phone quotes the report can be output to screen. Simple.

Then I get Mr John M. Finch-Hatten of P O Box XYZ, Cootamundra Back of Bourke, who wants a quote for three "Personally selected, Yum Cha Dynasty, Samuri Sword Holders, also personal introductions to at least one former owner and detailed history of each". This requires a lot of research and head-scratching to come up with a believable price and a lot of head scratching to come up with a wizened oriental gentleman to whip them up for me.

Again *System 3* will produce a quote by calling on Transaction - Enter Quotation. With special entries such as Consultants Rates and One Off Items in my stock list there is no drama. Mr John M.





Finch-Hatten could be the proud owner of his whats-it for the amazing, unrepeatable price of $1,299.00 within a good 45 seconds.

Special messages can be included on your quotation, invoice or statement for such occasions. I told Mr John M. Finch-Hatten that he was jolly lucky. I just happened to pick up four of these sword holders last time I was in Japan and no more were in existence.

Would you believe he ordered them!

Would you believe I sent an invoice with the order and he paid within seven days? Well 30 days anyway.

The rest of my customers, awed by my efficiency and the polite notes I included on their overdue statements began to pay up immediately. I discovered several people who owed me money, that I would have otherwise forgotten about, and included polite threats on their invoices too.

By the end of the month I was able to use the Report facility for an End of Month summary. I had a printed copy of every transaction and a tax summary for my accountant. This erased all transactions for the month and simply maintained a current balance for the month.

I was also able to get a Debtors Summary which provided me with a report on all customer accounts with current balances and a total figure for debtors. My wife now thinks my gadgets are wonderful.

Optional warning messages come in handy for falling stock levels. These are adjusted automatically as the orders are filled in. By experience I set these to what I felt were reasonable limits and didn't have to keep guessing at what my orders should be. There are several different options that can be selected with regard to warning messages from the Options - Preferences menu.

Spurred on by my new efficiency I even risked a stock-take. A very simple report listing product code, product description and a blank space for the quantity came churning out of my now overworked nine-pin printer and gave me a very enjoyable wet Saturday afternoon's work indoors.

As payments arrive I enter each one on its account number. (As you type in an account code, or product code, *System* 3 automatically adds in all the relevant details for you.) All accounts are balanced automatically and updated immediately. Occasionally a credit note is required. This does not have to be entered as a negative invoice but *System* 3 allows Credit Notes which are immediately printed up for posting.

With all this banking to do I now had opportunity to use the Cashflow Controller module on *System 3*.

Information regarding the current total invoice sales amount and the total invoices payments received is automatically loaded from within invoicing/stock control. If you choose not to automatically load, this information can be entered manually. Transactions are divided into the following categories: cash receipts, cash payments, credit purchase, credit purchase payment, bank receipt and bank payment. Any credit sales and credit sale payments are handled by invoicing/stock control (or manually if you so choose).

The cashflow controller works much like manual Cashbooks and Profit and Loss account. A journal is maintained for normal adjustments. Reports available from cashflow include account summaries, transaction reports, petty cash, year to date summaries, income expenditure reports and tax reports.

Detailed analyses are available from several categories and I am sure my accountant will find these very useful.

All of these reports can be printed to hard copy or screen which has saved me an additional $75.23 in paper which I would have wasted.

Overall *System 3* is a very capable program. It handles sale invoicing and stock control in a very simple and efficient manner. Very little is left for the average Kevin Carpenter to mess up and everything is exceptionally easy yet deceptively powerful.

Because *System 3* runs on a workbench window other utilities such as calculators, calendars, word processors can be used during a session. The cashflow controller saves a lot of time balancing cheque books and eliminates needless trips to the automatic teller to check on account balances.

The manual is sufficient. Pactronics provide more than adequate support to anyone who might require hand holding above and beyond. Within its price range I believe *System 3* cannot be beaten. For the small business person, importing gadgets, they don't get any better.

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1990 CONSUMER SURVEY

The following questionnaire is designed for the purposes of providing the Australian Copyright Law Review Committee with up to date information on consumer buying trends, support problems encountered with computer software in Australia and the pricing of computer software in Australia.

The parallel importation provisions of the Australian Copyright Act are currently under review to consider whether Australia should continue with the present "closed shop arrangement of Exclusive Distributors" or whether these sections of the Act should be repealed to allow open importation and distribution of all computer software, books, records and videos.

We strongly advise as many consumers as possible to complete this survey and return it to reach us no later than September 7, 1990.

ALL INFORMATION SUPPLIED TO US WILL REMAIN IN STRICT CONFIDENCE AND WILL BE SUBMITTED TO THE COPYRIGHT LAW REVIEW COMMITTEE ON THE SAME BASIS.

Name .....

Address .....

.....

Telephone .....

TYPE OF COMPUTER/S USED

AMSTRAD PCW ..... ATARI ST .....

AMIGA ..... COMM 64 .....

IBM OR COMPATIBLE .....

OTHER .....

WHERE PURCHASED (Name of store)

Specialist Retailer .....

Department/Chain Store .....

Other .....

COST OF INITIAL SYSTEM

$ .....

NEW EQUIPMENT OWNERS only

How do you rate the overall after-sales service and advice provided by the retailer:
(A = very good, B = good, C = fair, D = not very good, E = poor).

A B C D E

If you have had to have your computer or any peripheral repaired under warranty, how would you rate the service provided by the manufacturer:
(A = very good, B = good, C = fair, D = not very good, E = poor).

AMSTRAD	A	B	C	D	E
ATARI	A	B	C	D	E
COMMODORE	A	B	C	D	E
IBM	A	B	C	D	E
OTHER	A	B	C	D	E

(Name) .....

SOFTWARE SECTION

What categories of software do you mainly purchase?

Games ..... Productivity .....

Education ..... Other .....

Do you own any Back-up, Copying, Archival programs, cartridges or other such devices?

Yes / No

What is the average retail price that you pay for the following software?

Games ..... Productivity .....

Education ..... Other .....

Do you think that the price of software in Australia is:

Good value for money? .....

Fair value for money? .....

Poor value for money? .....

Overpriced? .....

Where do you generally purchase your software from?:

Specialist Retailer .....

Department/Chain Store .....

Local Mail Order .....

Overseas Mail Order .....

Why do you purchase your software from the above retailer?

Price ..... Availability .....

Service ..... Helpful advice .....

Support .....

Have you ever been offered counterfeit or pirate copies of software by a retailer?

Yes / No

Which of the following companies do you recognise as being software distributors?:

COMPUTAMART .....
COMPUTERMATE .....
DATAFLOW .....
ELECTRONIC ARTS/ECP .....
IMAGINEERING .....
MINDSCAPE .....
OZISOFT/QUESTOR .....
PACTRONICS .....
OTHER (Name) .....

How do you rate the overall level of service and support provided by the following companies?: (A = very good, B = good, C = fair, D = not very good, E = poor).

COMPUTAMART	A	B	C	D	E
COMPUTERMATE	A	B	C	D	E
DATAFLOW	A	B	C	D	E
ELECTRONIC ARTS/ECP	A	B	C	D	E
IMAGINEERING	A	B	C	D	E
MINDSCAPE	A	B	C	D	E
OZISOFT/QUESTOR	A	B	C	D	E
PACTRONICS	A	B	C	D	E
OTHER	A	B	C	D	E

In order of ranking, name 3 retailers who overall offer service, efficiency and general helpfulness:

.....

.....

.....

From what source do you first learn of new releases or gain knowledge of new software?:

Retailers .....

Magazines .....

Other Users .....

Please list the top 3 distributors whom you think provide consumers with the best after-sales service and information on products:

1 .....

2 .....

3 .....

Please list the distributors whom you consider provide the worst level of service and information:

A .....

B .....

C .....

Please list in order of ranking, the distributors whom you consider to have the most effective advertising:

1 .....

2 .....

3 .....

Please list in order of ranking, the distributors whom you consider to have the least effective advertising:

A .....

B .....

C .....

Which of the following magazines do you read regularly?:

A.P.C. (AUST.) .....
ACE (U.K.) .....
AMIGA COMPUTING (U.K.) .....
AMIGA FORMAT (U.K.) .....
AMIGA PLUS (U.S.) .....
AMIGA WORLD (U.S.) .....
AUST. COMM. & AMIGA REVIEW .....
GAMES MACHINE (U.K.) .....
INFO (U.S.) .....
PC LEISURE (U.K.) .....
PC TODAY (U.K.) .....
PC USER (AUST.) .....
ST FORMAT (U.K.) .....
ST WORLD (U.K.) .....
V.C. & C. (U.S.) .....
ZZAP (U.K.) .....

Which magazines help the most in your decision to buy a particular piece of software?:

.....

.....

.....

.....

.....

COMPUTERMATE 1990 RETAILER SURVEY

The information provided in this survey is, to the best of my knowledge, truthful and accurate.

Name ..... **Signature** .....

Address .....

.....

This completed survey is provided on the basis that all information provided herein will remain in strictest confidence.

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- 100% compatible - or your money back. Guaranteed to work with all your hardware and software, including copy-protected commercial programs.
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- Easy installation. No electronics experience or special tools required.
- Supports C64, 64C, SX64, C128, C128D, 1541, 1541C, 1541-II, 1571, 1581 and more.
- Can be completely switched out. If ever necessary, the flip of a switch returns you to a 100% stock configuration - without resetting or powering down. Built-in DOS Wedge. Plus 17 additional commands and convenience features. including file copier, screen dump, directory menu, and single-key load/save/scratch.

Available for C64, 64C, SX-64, C-128 and C-128D (JiffyDOS/128 speeds up both 64 and 128 modes), and 1541, 1541C, 1541II, 1571, 1581, FSD-1&2, MSD SD-1&2, Excel 2001, Enhancer 2000, Amtech, Swan, Indus & Bluechip disk drives. System includes ROMS for computer and 1 disk drive, stock/JiffyDOS switching system, illustrated installation instructions, User's Manual and Money-Back Guarantee.

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SO MUCH FOR SO LITTLE

POWER TOOLKIT

A powerful BASIC-Toolkit (additional helpful commands) that considerably simplifies programming and debugging. The toolkit commands can be used in your programs.

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Using Power Cartridge you can load up to 6 times faster from disk.The Disk commands can be used in your own programs.

TAPE TOOL

Using POWER CARTRIDGE you can work up to 10 times faster with your data recorder. The Tape commands can be used in your own programs.

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The POWER CARTRIDGE contains a very effective Printer Interface, that self detects if a printer is connected to the Serial Bus or User-Port. It will print all Commodore characters on Epson and compatible printers. The printer interface has a variety of set-up possibilities. It can produce HARDCOPY of screens not only on Serial printers (MPS801, 802, 803) but also on Centronics printers (epson, Star, Citizen, Panasonic etc). The HARDCOPY function automatically distinguishes between HIRES and LORES. Multi-colour graphics are converted into shades of grey. The PSET functions allow you to decide on Large/Small and Normal/Inverse printing.

On the back of the POWER CARTRIDGE there is a Reset Button. Pressing this button makes a SPECIAL MENU appear on the screen. This function will work with many programmes.

CONTINUE - Return to your program.
BASIC Return to BASIC.
RESET Normal RESET.
TOTAL BACKUP DISK Saves the contents of the memory onto a Disk. The program can be reloaded later.
RESET ALL RESET of any program.
TOTAL BACKUP TAPE As BACKUP DISK
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MONITOR takes you into the Machine language Monitor.

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COMMODORE 64

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Golden Image Optical Mouse

This optical mouse available from Computa Magic and MVB Computers in Victoria is the only replacement to my original I would consider.

It is a true optical mouse, ie no moving parts. Movement tracking is simple. Two low intensity LEDs shine onto a special reflective pad. The light reflects onto a chip through a lens in the base of the mouse.

There is no roller ball to skitter at high speed and collect fluff. The mouse, weighing 85 grams, is a pleasant change to pushing a truck. The three buttons have a posaitive feel and an easy clean operation. During a severe test on Star Wars they did not stick like the old Amiga mouse. I experienced less fatigue because of the shape of the mouse and the snug fit under the hand.

When using a drawing or design program like Design 3D or Delkuxe Paint III the mouse is easy to control and makes for fewer edits under magnification.

Technically, the Golden Image mouse has high resolution, 250 DPI, is highly sensitive and accurate. It has long term reliability and no maintenance. The mouse functions without loss of performance on uneven or sloped surfaces. The only drawback is the chance of losing your pad. It did however function using a typed sheet of paper and graph paper as a pad. Replacement pads are available though.

At $129 it represents good value if you are looking for a step up in comfort and response from your mouse.

K. LONGSHAW

Win an Optical Mouse !

Simply write to us saying which of the advantages mentioned in the above article you think is the most important (ie "easy to control", or "long term reliability"), and you could win a Golden Image Optical Mouse.

Address your letter to Optical Mouse, Australian Commodore and Amiga Review, 21 Darley Road, Randwick, 2031. Letters should arrive here by 4 October 1990.

Winner of Amiga Action Replay Competition

The above competiton has been won by Mick Gooch of Lowood, Queensland. He wrote:

I would like to enter your Amiga Action Replay Competition for many and varied reasons. Most of these are selfish and some are based in furthering my boys' computer education. Like me, they are unaware of the actual processes involved in the production of the final "on screen" product. The Amiga has proven a particularly difficult customer for me to get to fundamental grips with - this product apprears to offer the potential for further progress.

Anyway, here are 25 words why I would like to own an Amiga Action Replay Cartridge:-

"Dad gets stuck on level 1, he dies so often that increased reload speed and slower action are essential. He might learn something about computing."

My two computer literate joystick jockeys believe that this is why I need such a product. One day they may have to eat humble pie!

Kindest regards,
Mick Gooch

Amiga Action Replay Cartridge is distributed hy HPD Pty Ltd, (08) 349 8486.

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Requires at least 1 meg of memory.

Macro68 is a **powerful** new assembler for the entire line of Amiga personal computers.

Macro68 supports the **entire** Motorola M68000 family, including the MC68030, MC68882 FPU, and MC68851 MMU, as well as the Amiga Copper.

This **fast**, multi-pass assembler uses the new Motorola M68000 Family assembly language syntax, and comes with a utility to convert the old-style syntax source code painlessly. The new syntax was developed by Motorola specifically to support the addressing capabilities of the new generation of CPU's.

Macro68 boasts macro power **unparalleled** in products of this class. There are many new and innovative assembler directives to make programming easier. For instance, a special structure offset directive assures maximum compatibility with the Amiga's interface conventions. A user-accessible file provides the ability to customize directive names and run-time messages from the assembler. An AREXX(tm) interface provides "real-time" communication with the editor of your choice. A number of directives enable Macro68 to communicate with AmigaDOS(tm).

Possible the most unique feature of Macro68 is the use of a shared library, which allows **resident preassembled include** files for **incredibly fast** assemblies.

Macro68 is **compatible** with the directives used by most popular assemblers. Output file formats include executable object, linkable object, binary image and Motorola S record.

Resource, the powerful disassembler for the Amiga that has received rave reviews, now has a big brother.

Like the original version, **ReSource'030** will tear apart your code like no other program. And it will do so even faster now, because **ReSource'030** is written in native MC68030 code. This means that it won't run on a vanilla 68000, but it will fly on an A3000, or another machine with a 68020/030 board.

ReSource'030 supports the new Motorola M68000 family assembly language syntax, and is a perfect companion for Macro68.

If you're new to **ReSource**, here are a few facts:
ReSource is an intelligent interactive disassembler for the Amiga programmer. **ReSource** will enable you to explore the Amiga. Find out how your favorite programs work. Examine your own compiled code.

ReSource will load/save any file, read disk tracks, or disassemble directly from memory. Symbols are created automatically, and virtually all Amiga symbol bases are supported. Additionally, you may create your own symbol bases.

"If you're serious about disassembling code, look no further!"

The original **ReSource** continues to be available for owners of 68000 based machines. Both versions of **ReSource** require at least 1 meg of ram.

ReSource	$130.00
ReSource'030	$195.00

ReSource

The Best Disassembler

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CMD Hard Drive

Looking for an alternative to a string of 1541 drives? **Rod Gasson** *has the answer...*

Having recently set up a BBS dedicated to Commodore 64/128 users I found that my two 1571 and one SFD1001 disk drives were severely limiting.

Although the old Commodore SFD drive is capable of storing 1 meg of data, there just wasn't enough capacity to store all the files and data that a reasonable sized BBS requires. I only really had one option, and that was to purchase a HARD drive. After making a few enquiries I found that there were only two hard drives available for the C64/128, these are the Lt.Kernal and the CMD series.

I was able to contact a couple of people using the Lt.Kernal to find out a bit more about them, but I could find no one that had actually got (or used) the new line of drives from CMD. Anyway after a bit of consideration I decided to purchase the CMD HD40. The reasons for my choice were:-

➦I was very impressed with CMD's other great product, Jiffy Dos, and I figured that if they had put as much thought and effort into producing the HD as they did with their JiffyDos, then the drive would be and do everything that the makers claimed.

➦The CMD drive is claimed to be almost 100% compatible with most software, since it uses the serial cable and standard DOS commands, whereas the Lt.Kernal uses a parallel cable, and it isn't as compatible with other programs as the CMD, also the Lt.K is BIG and noisy (or so I have been told). When I put the CMD drive through its paces, this is what I found . . .

I was pleasantly surprised at its construction, it is small (5" + 3" + 10") and STURDY, it has a nice solid feel to it, and is very well constructed.

It came complete with instructions, serial cable, two utility disks (floppies) and an American (110v) power supply thus making it necessary to use a step-down transformer. This latter was a mistake, because CMD do supply these units with a suitable power supply for Australian conditions (I am currently waiting for the "proper" power supply to arrive). Anyway I have been assured that all units being imported now do have the correct supply.

The instruction manual is in the form of a ring-bound folder which makes it ideal to add pages etc as and when future DOS upgrades and docs are released.

It is quite well laid out, and goes through the basics of how to set-up and use the drive, through to advanced applications on how to access its various functions from within your own programs, and all aspects of it include practical working examples, making it ideal for both beginners and experienced users.

As mentioned earlier the HD comes with two utilities disks, one for GEOS and the other contains the HD DOS and the other support programs to make setting up the drive child's play.

The hard drive arrives already preformatted with the latest version of DOS already installed, along with copies of the utilities programs, but being a bit of a "fiddler" I decided to reformat and reinstall the DOS myself, just to see how it works. The whole thing went without any problems, it was only a simple matter of loading the appropriate program from the floppy and following the on screen instructions, a real breeze. Also for the programmers and those that like to really "get at" the data on the drive is a utility program called *HD disk cracker*.

This is a module by Mike J.Henry along the same lines as his other disk cracker programs for the 1541/71 (I am sure that most "serious" users would have seen and used at least one of Mike Henry's programs).

For those that are loathe to dabble with things like disk editors, and have no idea as to what it means to install DOS, it is really not necessary to know about them because the drive does arrive all ready to use, with several partitions already set up for you.

The GEOS utility disk supplied contains several modules designed to be placed onto your GEOS BOOT disk. This will enable the GEOS program to recognize the hard drive, it will also set the GEOS's system clock upon loading by reading the clock from the hard drive. The manual says that these modules were created to work with GEOS V2.0 or higher and no attempt was made to make them compatible with earlier versions, therefore they cannot take responsibility for any problems.

Back to the basic operation. My first priority was to set the drive up so that I could run my BBS from it, so I figured the simplest way was to select the largest partition available to me (16 megs) and place all of my systems and download files into that partition. This was a simple job using a standard file copier (also supplied), but time consuming. After all was transferred, I loaded the BBS and ran the program. All worked without a hitch with one noticeable difference - it was FAST - so I then decided to do a few speed comparisons.

This is what I found.

Loading a 202 block program file (about 50k)

1541 d/d	(stock 64mode)	=2:11:85
1541 d/d	(jiffy dos 64mode)	=16:53
1571 d/d	(stock 128mode)	=15:82
1571 d/d	(JiffyDos 128mode)	=15:87
CMD HD	(stock 64mode)	=1:26:63
CMD HD	(JiffyDos 64mode)	=7:60
CMD HD	(stock 128mode)	=9:28
CMD HD	(JiffyDos 128mode)	=7:60

As can be seen, the best performance is achieved with Jiffy Dos installed in any mode, but even a stock 128 gives a very fast time of just over 9 seconds for a 50k program, which is not bad at all considering it is all done via the serial interface. (I

Cont. on page 27

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have been told that the Lt.Kernal can double these speeds, but this is only achieved with a parallel interface). All the times were taken from the time I pressed the return key until I got the "ready" signal, so therefore include the time it takes to search the directory.

The HD partitions can be set up in several different formats, these are:

1) Native mode. You define the size of the partition, anything from 256bytes up to 16megs. As mentioned previously I originally set my BBS up onto a single partition of 16megs (over 65000 blocks free), which makes the "standard" 1541"s 664 blocks look like a drop in the ocean and that is only 1/3 of the storage capacity available to me, it even makes the 4322 blocks free on my SFD drive look pathetic.

2) Printer Buffer. Although this option isn't available on my version of DOS it is available on all units now being shipped. It allows you to set a predefined area as a printer buffer, the printer serial cable plugs into a separate socket in the HD and when you select print output from ANY program the data is interrupted and sent to the HD instead, the HD Dos will then relay this data out to your printer. By using this facility your computer is released for further use in a matter of seconds while the print out is being performed by the HD.

3) Emulation mode. In this mode the partition is set up to emulate either the 1541/1571/1581 drives, this is ideal for those programs that look for data on a particular track and sector. I haven't used the 1581 emulation mode, but the 1541/71 modes work very well. On my test run I copied a program that made heavy use of direct track/sector access. It performed flawlessly, you can even use a standard 1541/71 disk editor to read these disks directly: for all intents and purposes when a partition is set up in this mode the HD behaves EXACTLY like the drive it is emulating, but faster. I did have problems trying to use some copying programs with it (such as *Fast Hackem*).

4. Foreign mode I'm not sure about this but apparently it allows you to set up a partition in an "alien" format suitable for IBM's, Amiga etc, this (plus the SCSI port) allows you to use the HD with other types of computer. This "alien" format can also co-exist with the normal Commodore formats, allowing two different computers to share the same hard drive.

Up to 255 partitions can be defined, but in practice you will never use this many because it is easier to just use quite large native mode partitions for most applications, and therefore you will usually run out of memory space before you can even get close to using that many.

Loading/saving programs from various partitions

This is simplicity itself, and there are two ways to do this.

You can select the "current" or "default" partition with a simple basic command - open 15,8,15,"cpx" where "x" is the partition you wish to use. All subsequent disk operations and access will be to the new partition.

Or from ANY partition you can load or save a program from any other partition with a simple load"n:filename" where "n" is the partition where the program is stored. This is an extension of the basic 2 syntax when "n" is usually reserved for a dual floppy and used to define drive 0 or 1, but it can now be extended to up to 255 "drives". If "n" is set to "0" then the HD treats this as a special case and accesses the "current" partition. This type of syntax is what makes the CMD HD so compatible

cont. on page 32

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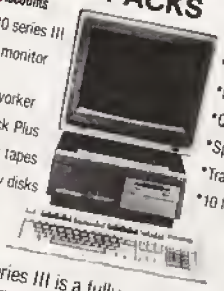

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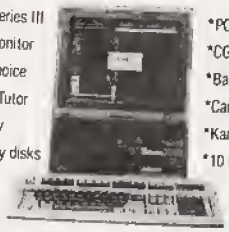

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Tower of Babel	3D strategy epic	59.95
Toyottes	Crazy fun maze game	49.95
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X Out	Hot new shoot 'em up!	59.95
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Champions of Krynn	New D&D role playing hit	59.95
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Dragons of Flame	Latest D&D series	54.95
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Leisure Suit Larry 3	Great adult 3D adventure	59.95
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Pirates	Fantastic adventure!	59.95
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Police Quest 2	Sierra police adventure	59.95
Romance of 3 Kingdom	Epic sized adventure	109.95
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Page Stream Fonts	Additional fonts	59.95
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Kid Talk	Quality educational software	49.95
Kids Collection	Educational fun	59.95
Kinderama	Educational preschool age	69.95
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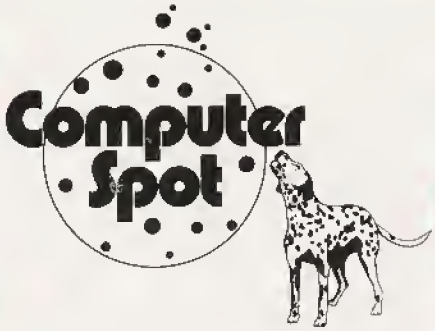
Math A Magician	Maths educational	49.95
Math Talk	Quality educational	44.95



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- Teenage Mutant Ninja Turtles
- Midwinter
- F-29 Retaliator
- Fighter Bomber
- Secret of the Silver Sword
- Champions of Krynn
- Italy 1990
- Their Finest Hour
- Loom
- Leisure Suit Larry 3
- Pro Tennis
- Kick Off 2
- Pirates
- Bars and Pipes
- Resolution 101
- Sherman M4
- Wide World of Sports Pack
- Greg Norman
- Can Do
- Heat Wave

SPORT

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Flight Simulator Scenery Disk	Japan, Europe, USA	49.95
Flight Simulator 2	Professional simulation	79.95
Horse Racing	3D animated racing fun	69.95
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688 Attack Sub	Amazing sub battle simulator	49.95
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Superback	Hard disk backup	99.95
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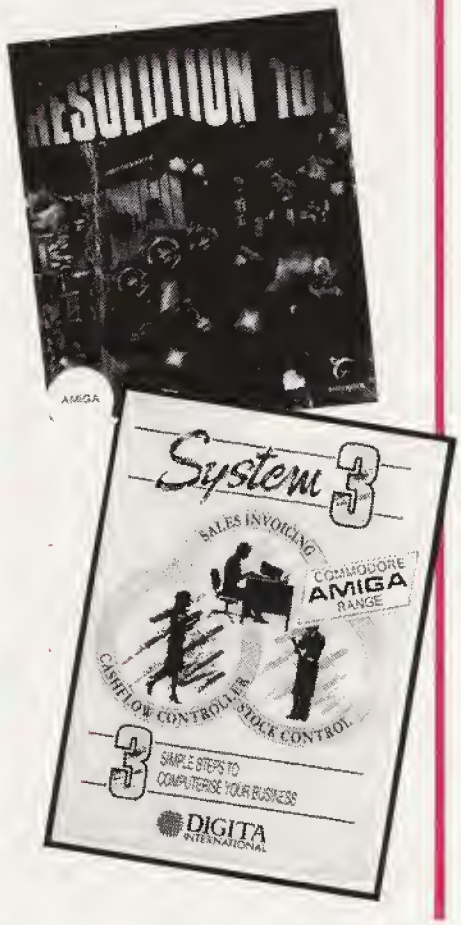

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Joystick Analog Extra	Superb PC joystick	64.95
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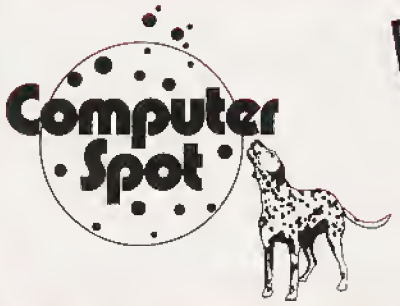

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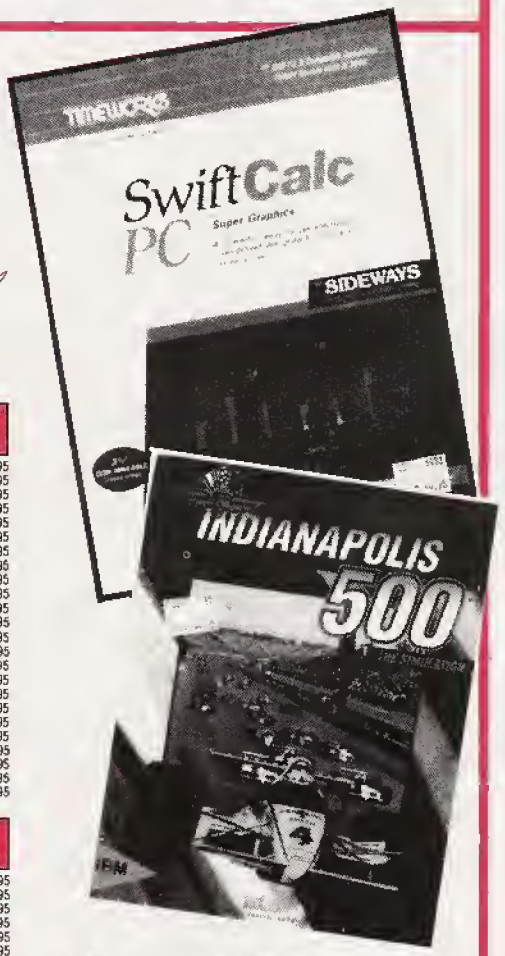

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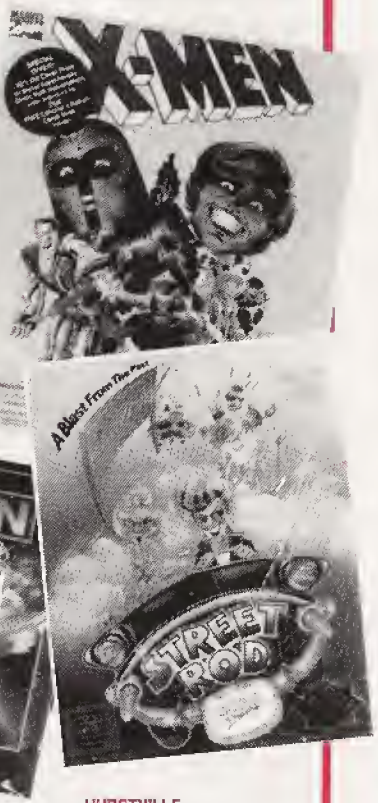

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with existing software, and also makes it very easy to write or modify existing programs to make the most efficient use of the HD. All of these commands can be entered directly or from within a program.

Other Features

SWAP: This is a function controlled by pressing a button on the front of the hard drive. What it does is to easily allow you to swap the hard drive's device number with whatever device is currently assigned to device 8 (or 9).

As an example assume you have set your HD as device #10 and there is a 1541 on the serial bus designated as drive #8. When the swap 8 is pressed the HD becomes drive #8 and the 1541 will become drive #10.

While this doesn't appear to achieve much on the surface, it is a very powerful feature, eg with software that only recognises drives 8 and/or 9 you can use the swap function to make the HD drive 8 (0r 9) before loading the software (if the program is on the HD) or after loading if the program is copy protected and cannot be moved onto the HD.

CLOCK: The HD is equipped with a real time battery backed clock so that the clock will continue keeping time even when the drive is turned off or disconnected from the power supply. This clock is accurate and also maintains the date (date/month/year). This can be read and used from BASIC. I have modified my BBS program to make use of this clock so that I don't have to reset the system clock every time I reboot the BBS.

TIME & DATE: Any time a file is saved to the HD it is time and date stamped, so you can see at a glance when a program was last saved. You can also view the directory using the time/date stamping for a selective directory - it is easy to find all files saved to the HD before, after, or in between any given times or dates. This information can be invaluable, especially with the BBS where files are continually saved without any intervention on my part. It also makes maintaining back-up files very easy, because all I am required to do is keep a note of the last time I made a backup, then do a selective directory search of anything saved after that time/date and only back up those particular files.

The CMD HD's are not for everyone, (the cost is a lot more than the cost of the original computer that it is designed for). But if anyone has a need for a very large storage capacity drive, then the CMD HD is more than capable of performing the job required of it. I would personally recommend this unit as it does what it is supposed to do and it does it well. It has a lot of features not available with other drives, and CMD seem dedicated to continuing support for the C64/128.

The ability to have up to 255 1571 disk drives at my disposal at "the touch of a button", without the need to sort through heaps of floppies, makes my system a dream to use, and brings my C128 into the realms of being a true workhorse that even Commodore never dreamt of.

And I can still play one of the many thousands of C64 games.

CMD hard drives are imported by Hardware Peripheral Distributors, 5 Railway Terrace, Dry Creek, SA, phone (08) 349 8486. The cost is approx $1100 for 20 meg version, approx $1500 for 40 meg version, price unknown for the 100 meg.

If anyone has any other queries or questions regarding this drive I can be contacted on Thistle Dome BBS phone (08) 322 2716 24hrs/7days, modem speeds 300/300, 1200/1200, 1200/75, 2400/2400. ❑

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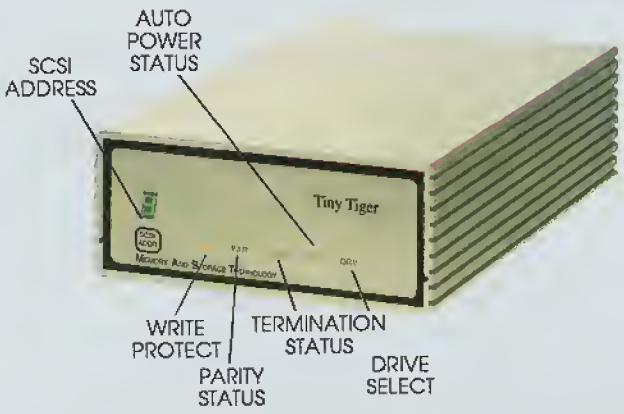

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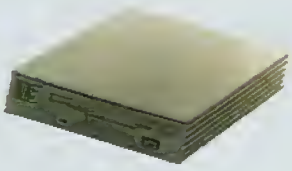

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We preview Blitz BASIC

by Andrew Farrell

After spending a lot of time playing with *AMOS* last month, it was with much enthusiasm I attended the launch of Blitz BASIC at the offices of Memory and Storage Technology. It was a pleasant to change to be invited to a launch - not too many companies bother these days.

Blitz BASIC was developed in New Zealand by a very talented young programmer, Mark Sibly, who at 22 years of age has some ten years' programming experience.

He started out with a Tandy TRS-80 - a horrible old black and white chunky graphics machine. Mark moved on to the Apple II, then the Vic 20, and the C64. Now he plays with the Amiga and in his spare time churns out powerful programming languages which although resembling BASIC, enable you to write programs which look more like *Defender*.

Blitz is fast. Blitz takes over your Amiga and provides a group of game and graphics oriented commands which in a few lines of code can make your Amiga do somersaults. At the launch, a small group of serious Amiga-heads watched in awe as the aforementioned *Defender* game played fairly much like the arcade original. The one change was that it now works with two players at a time in a split screen environment. Blitz handles screens which may be divided up many times with each strip displaying a different Amiga graphics mode.

There are commands to handle everything you need to make a top class game. Blitz works better than alternative BASICs because it is so much faster and includes a built in compiler. The user interface provides a powerful text editor which can be used to launch other Amiga programs, such as *Deluxe Paint III*, for times when you are developing on the fly. ANIM brushes are fully supported too!

The resulting compiled code may be freely redistributed. (A demonstration disk is available, which is well worth getting - try (02) 281 7411 or your local supplier of PD software.)

Blitz Basic provides a lot of low level power. Compared to *AMOS* it is a faster, tighter language. However, it lacks some of the more high-level commands which *AMOS* has. There is no support for relative files, no easy way to create screen gadgets and no structured programming commands. But, Blitz Basic comes with snappy demonstrations which seem to prove the theory that you don't need a big powerful language to write good games. A small rocket may be better than a jumbo if you're in a hurry - and games need to happen fast!

I recommend you take a close look at Blitz. Some sample code is included below. Blitz Basic should be in shops over the next few weeks. Watch for a full review next issue.

A slice out of the middle of the *Defender* game code...

```
DISPLAY 320,28,0,1,0,4,5
SHOWF 4:SHOWB 5
PLOAD "ram:scancols.def",0,0,0
USE SCREEN 4
USE SCREEN 5:PLOAD "ram:scorebar.def",0,0,8
SLICE 2,sl2:USE SLICE 2:SPRITE 0:GOSUB colrmnts
DISPLAY 288,96,0,1,1,2,6
SHOWB 6:SHOWF 2,32,16
GOSUB makemnts
j=0 TO 2 STEP 2
USE SLICE j
IF j=2 OR gmode>0
 a=0 TO 12 STEP2:RGB 15,15-a,15-a,15-a,a/2+16:NEXT:RGB
15,0,0,0,16+7
 IF j=0
  a=0 TO 12 STEP2:RGB 15,15,15-a,0,a/2+24:NEXT:RGB
15,0,0,0,24+7
 ENDIF
 a=0 TO 12 STEP2:RGB 15,15-a,15-a,15-a,a/2+32:NEXT:RGB
15,0,0,0,32+7
 IF j=2
  a=0 TO 12 STEP2:RGB 15,0,15-a,15,a/2+40:NEXT:RGB
15,0,0,0,40+7
 ENDIF
ENDIF
a=0 TO 31:RGB a,0,0,0:NEXT
NEXT:COLOUR 7:RGB 0,0,0,0,96
```


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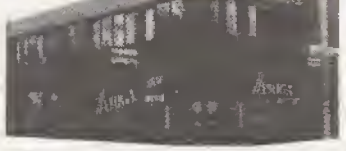

ESTABLISHED 1968

In the public domain

by Michael Taylor

HERE ARE A few reviews of the some of the more recent offerings of value in latest Fred Fish disks - which are available from most good public domain outlets and suppliers including, but not limited to, Megadisc, White's Computers, Prime Artifax and your local Commodore user group.

MSH: MSDOS floppy device driver FishDisk327

● I use an IBM PC at work and have access to a laser printer. Unfortunately I do not have a 5.25 inch disk drive so I was not able to use the PC Copy utility from the Workbench Extras disk to copy files created on the Amiga to MSDOS formatted disks and thus print them at work.

Then along came PC PATCH (Fish Disk 163) and then PC PATCH 2 (Fish Disk 218) which allowed me to use my 3.5 inch external drive to read, write and format MSDOS disks. First in 360k format and then 720k format. The only problem was that the user interface insisted that you selected files one at a time and you could not use it as a device driver so that you could access files on the MSDOS disk as though they were AmigaDos files.

Then along came CrossDos. This claimed it would do all that I wanted. Unfortunately it is a commercial product and the Public Domain version is a read only "TryWare" version. Before I ordered a copy the public domain equivalent was released.

MSH: is on Fish Disk 327. MSH or MessyFileSystem is a MSDOS Device that enables you to read and write IBM PC MSDOS formatted disks from AmigaDos. It is simple to install if you are familiar with the Amiga's Command Line Interface (CLI) and should still be fairly easy for those inexperienced with the CLI as the documentation is complete.

The documentation states that you should be able to use MSDOS formatted disks as though they were AmigaDos disks. This means that after you mount the MSH: device you can reference files on a MSDOS disk from your favourite wordprocessing or paint program. I put this to the test by installing MSH:. Before I got a copy of MSH: I read some messages on one of the international usenet Amiga conferences reporting problems with installing MSH:. The sample mountlist does not supply the full pathname in front of the device driver name.

This caused a problem for some people when the mount command could not locate the device driver. I did not have a problem with this. MSH: worked first time and has continued to do so. However if you have problems then make sure that the mountlist has the complete pathname. The AmigaDos copy command copied files back and forth without complaint and all the public domain and commercial programs I have tried have worked flawlessly with it.

All is not completely perfect with MSH:. The MSDOS format program works but requires you to answer a lot of questions before it starts formatting. You can press return and accept the defaults for most of them but the last question is the most interesting. It asks you to enter '42' if you want to format the disk. Beats entering Yes!

Complete source code for Lattice c is supplied with MSH: along with technical documentation. So for an example of a working MSDOS device handler and a useful utility I recommend MSH:.

MR BackUp 3.4 Fish Disk 327

● Also on Fish Disk 327 is the latest version of Mark Rinfrets' Backup Program. I started using this program (version 2.4) soon after I set up my hard disk. It is slower than the commercial products but for a suggested donation of $10- is much cheaper.

It is a great way to demonstrate the Amiga's capabilities. Start up MRBackup with "run MRBackUp" and begin backing up your hard disk. Next push the MRBackUp window to the back and start playing a game or editing a file. MRBackUp will prompt you to change disks and will even speak if you ask it to.

MRBackUp's user interface is good and it has a lot of options for backing up your disk (ram:, floppy or hard disk). You can use the archive bits introduced with AmigaDos 1.3 to control which files are backed up and you can resume a backup later on if the first backup is interrupted in some way. I must add that I have not had my Amiga guru while running MRBackUp. MRBackUp comes with a good users' manual (on disk of course) which has answered all the questions I have had.

I have set up MRBackUp to compress files while backing up and set the archive bit. It also writes a log file and a backup listing file to disk. The archive bit is associated with each file and if set indicates that the file has not changed since the last time it was backed up.This is useful for incremental backups but should not be used if doing a complete backup. These options and more can all be saved to a preferences file which is read by MRBackUp when it is started. All the options are customisable in this way. You can also specify the names of files that should not be backed up (or a pattern to be matched such as #?.o or *.o meaning all object files) and the extensions of files that should not be compressed (such as .zoo and .arc).

One of the most important new things that must be learnt when you have a hard disk drive is "backing up". MRBackUp is a good hard disk backup program that will also backup your ram disks and floppy disks. My one complaint is that it is not as fast as the commercial versions. For the price MRBackUp is a bargain! MRBackUp is a "laidback shareware program" - that means that the author would like a donation but welcomes feedback from users even if they are non-contributing.

SID : directory utility

● There have been a lot of directory utilities released into the public domain. DU5 is one example. SID is a shareware program which has a powerful set of commands and a nice intuition interface. It runs automatically in the background and can handle archived/compressed files.

cont. on page 38

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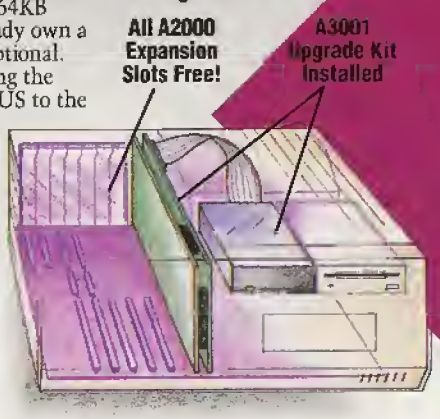

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SID is on Fish Disk 338. It requires installing by copying its configuration file to the s: directory and the SID program file into the c: directory or some other directory in the AmigaDos path. The configuration file contains information that tells SID which programs to use to view picture files, edit files, unarchive files and so on. All the utilities needed are public domain files and I already had them in my collection so it should not be too difficult to track them down if you needed them. Anyway many of SIDs' functions are internal.

Using SID is very easy. If you are like me and prefer to use a program for a while before you read the documentation you will find its method of doing things intuitive and easy to pick up. It is advised that you read some of the documentation that is provided. Two files that are helpful are "readme.newusers" and "SID.minidocs". These explain the essential operations that you need to know to use SID effectively. In SIDs' favour most of the items in these files I had already worked out or were obvious.

SID can tell what a file is by reading the AmigaDos "magic number". This is a short sequence of characters at the beginning of the file that indicate what sort of file it is. Therefore SID is able to automatically determine what action to take when you double-click (ie select) a file name. SID called up the IFF (Interchange File Format) Picture Viewer automatically when I selected a picture file and displayed the contents of a text file using its internal file viewer.

It is possible to set SID up so that it would be unnecessary to use the AmigaDos CLI for almost all routine computing tasks. If you are using the Amiga for programming then you will still need to use the CLI or a custom programming environment However if you are using your Amiga for text editing (word processing), graphics, music or spreadsheets then SID can call up the appropriate program when you select a file. In the "SID.docs" file is a list of file types that SID can recognise automatically. If SID does not know the file type then the file is loaded as either a text file or a binary file. Amongst the file types that SID recognises are WordPerfect files, Maxiplan Spreadsheet files and PageStream documents.

Of all the directory utilities I have used on the Amiga SID is the most complete and the quickest to learn to use. I only referred to the manual for the configuration information I needed to install it on my hard disk. A list of features in the "works" is: an interactive configuration editor (you currently have to use a text editor and refer to the configuration documentation) that will explain what each option is as you edit it, a complete second set of user-defined buttons, a directory queue that allows you to store directories for quick retrieval, a completely revamped text reader, a print queue similar to WordPerfect — only better, and a disk copy and format program.

The author of SID has a update program where registered user can receive the next update automatically for about six dollars. Each release has been tested by about ten beta-testers and I certainly have found SID v1.06 to be very stable.

Archive programs: PKAZIP PKXARC ZOO LHARC

● When you use a modem to get public domain software from a bulletin board you will find that the files have been compressed using one of the popular archive/compression programs. This is a useful way to save space on the disk and to reduce the time needed to transfer the files over the telephone line. A great plus when making a long distance call!

I have used most of the popular archive programs on the IBM PC and, in the process of transferring files from the PC to the Amiga had problems when the archive program on the Amiga could not uncompress an archived file. Fortunately this is no longer the case.

The popular archive programs on the Amiga now have equivalents on the Amiga. Zoo version 2.01 and pkxarc is available on most bulletin boards and possibly on a Fish disk. Lharc, the newest of the IBM PC archive programs is available on fish disk 312 and, finally pkzip or rather pkazip is available on fish disk 314.

These programs have been able to handle all the archived files that I have tried and are a useful addition to your utilities directory. All work from the CLI with the exception of pkazip which has an intuition interface. The CLI based programs will print a help message if run with no parameters so even if you do not have the documentation they can be used easily. If you have used the IBM PC versions then you will find the operations are the same. Pkazip is very different. It works from the CLI or workbench and opens up a custom screen. The interface looks good but the program has a number of quirks.

For example when unzipping (decompressing) a zip archive file the destination for the unzipped files always has to be selected. I would have preferred it to default to the current directory. I also had trouble when entering the directory name. If you do enter a "/" as the last character the unzipped files are placed in the previous directory not the directory you specified. Once you have got used to the conventions pkazip works and can handle the latest pkzip files from the IBM pc (MSDOS version 1.10 from March 1990). Unfortunately I have heard a rumour that the original programmer was fired by PKWare the owners of PKZip and a new version was being written. This means that as the IBM PC version evolves the Amiga version may lag behind. The reason the original programmer was fired was reported as being due to the lack of shareware payments received!

For anyone receiving public domain software from a bulletin board system then these archive utilities will be very useful. Most BBS's are run on IBM PC's or compatibles.

RCS: Revision Control System

● On UN*X systems is a text file revision maintenance system called SCCS (Source Code Control System). This is used to help co-ordinate software projects and keep track of revision numbers and keep previous revisions available in a space efficient manner. SCCS automates the storing, retrieval, logging, identification, and merging of revisions. SCCS is useful for text that is revised frequently, for example programs, documentation, papers and form letters.

Another version of this system exists in the UN*X world. Called RCS for Revision Control System, it is a public domain implementation of SCCS and the Amiga version is available on Fred Fish Disk 282.

If you cannot see a reason for a utility like RCS then consider the following scenario: You have just modified a program and discovered that the new version did not work. If you have a copy of the old version you can copy that and all is well. However if you did not keep a copy of the original you will have to try and recreate the original working version from the modified non-working version. With RCS or SCCS you can recreate any previous revision of the program. Of course you have to have "checked in" a previous version but this takes up less space on disk than multiple copies of a file as each revision is stored as the differences

from the previous revision. Also the saving of revisions can be made at convenient times such as when the source code compiles cleanly.

RCS also will automatically insert log entries in the source code when ever a change is "checked in". RCS asks for a log entry and, if your source code has the string "LOG" it will add the log entry. I put the LOG string in a comment at the start of the code after an explanation of what the program is. Other useful strings are $DATE$ which is the date the revision was "checked in" and $REVISION$ which is the revision number.

The user interface is very simple. Only two programs or commands need to be learnt. Ci, "check in" and co, "check out". The check in command stores the contents of a text file into an archive file called an RCS file. Check out retrieves revisions of a text file from a RCS file. There are other commands with RCS and these can be used after the two "basic" ci and co commands have been mastered.

There are many options available with RCS. Any previous revision of a text file can be retrieved, two revisions (for example from separate programmers) of a text file can be merged, two revisions can be compared so the changes can be checked or identified and separate revision trees (that is separate lines of development) of the same source file can be maintained.

As can be seen RCS is very useful for software projects involving a number of people. If a file is revised by more than one person the changes can be merged. If any conflicts in the two versions exist then the user is alerted to the overlapping changes. Previous revisions can be compared to see what the changes were. A history or log of the changes and who made them can be kept for each text file. There is a command, rlog, which will print all the information associated with an RCS file. The log information can therefore be looked at easily and can be maintained in the source text file as well. RCS requests a log entry whenever a revision is "checked in".

For ongoing development, whatever type of text files are involved, RCS is a useful tool for keeping track of revisions. It has a great deal of flexibility in the control of multiple revisions and is an essential tool for multi-person projects. ❑

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Playing the D - Strings
Part II - Introducing Cyclic Strings

by Daniel M. Henderson

Last month we saw how this sort of algorithm costs you 255 bytes for each character you feed it. Inputting a modest 80 characters with this code will cost you more than three kilobytes of memory.

Say you wanted a little more sophistication, like a DELETE function. That's easily added with:

```
3010 IFI$=CHR$(20)THENIP$=LEFT$
(IP$,LEN(IP$)-1)):GOTO3000
```

This expression can cost you up to 254 bytes of memory for each character you DELETE from IP$. Definitely conceived by the boys at Westpac. There must be a better way.

CINGET

INPUT, for all its faults and eccentricities is a memory efficient function. It achieves this efficiency by queuing all it's data in a buffer down at Decimal 512.

This is the same buffer that holds any line you enter on the computer screen. Your computer first scrutinises it there before adding it to your program code (if you're in programming mode) or executing any commands (if you're in direct mode) or assigning it to a variable (if you're in INPUT mode).

This space is used repeatedly, so garbage or old data is continually overwritten. No graffiti is left strewn around the landscape. So what we want is to create our own buffer for our own customised Cyclic input function: CINGET.

INPUT's buffer is limited in practice to 79 characters. We can create our own buffer up to the limit of a string's length (255 characters). A good place to stash it would be at Dec 49152, that would take up no user memory.

However that would need unnecessarily complicated routines. Much more straightforward is to make our buffer a dummy variable that we can Cyclically reuse and which can go anywhere in normal memory.

Here are the routines for setting up a buffer of 120 characters:

```
800 REM CINGET CONTROL
805 REM CINGET COPYRIGHT
D.M.HENDERSON JUNE 1990
810 BFL=120:GOSUB850
820 GOSUB 900:CI$=BUFFER$:PRINT:
PRINT"{CTRL2}"CI$:END

850 REM SETUP CINGET BUFFER
860 GOSUB2000:NB=BS-BFL+2
820HB=INT(NB/256):POKE52,HB:
POKE51,NB-256*HB:NB=NB-3
830BUFFER$="X"+"Y":GOSUB1000:POK
ENA,BFL:RETURN
```

So we now have a synthesised string variable in memory (BUFFER$) which can act as our 120 character long buffer. In line 820 we pass its value over to our own variable (CI$) and display it. Here is the CINGET routine that does the work:

```
900 REM CINGET ROUTINE
910PRINTCHR$(30):POKE646,5:PA=0:
GOSUB2000
915X=LEN(BUFFER$): GOSUB1100:
NB=LB+256*HB
920 POKE204,0:WAIT198,1:GETI$:
POKE205,3:wait207,1
930 K=ASC(I$)
940 IFK=13THENPRINT"{SPACE/CRSR
LEFT/CRSR LEFT/SPACE/CRSR
LEFT}":POKENA,PA:POKE51,C1:POKE5
2,C2:RETURN
950 IFK=20THENPA=PA-1:GOTO990
960 IFK<32ORK>93THEN:IFK
<160ORK>221THEN920
970 IFPA=BFLTHEN920
980 PA=PA+1:POKENB+PA,K
990 PRINT"{CTRL 6}"I$;:GOTO920
```

CINGET uses as many bytes as you set up for the buffer and then as many bytes as you actually need for each inputted string. Maximum needed here would then be 240 bytes. (Concatenated GET would need 7380 bytes to input and assign 120 characters, 7140 bytes of which would be garbage.)

Line 1910 sets the character and cursor colours and checks the bottom of strings.

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Line 920 has the POKES and WAITs needed to give you a cursor. From then on it's all to do with direct access to BUFFER$.

In line 960 there are filters that block any non alphanumeric keyboard entry, like CURSOR or CLR keys. Line 950 caters for DELete.

When you press RETURN line 940 erases any cursor tracks and sets the length of the input string you've created. It also resets the bottom of memory to erase the useless GET string values that have been tacking themselves on there.

Line 915 is just an insurance measure in case a garbage collection might move the location of BUFFER$. It keeps the most important variable in the routine, NB, updated. You can get by without that by initialising the CINGET buffer before any other strings. Then BUFFER$ won't move during garbage collections.

There are lots of bells and whistles you can add to an input routine and the exact filters are up to you. Nothing looks more professional than a program that doesn't even allow the keyboard to respond to data entered in the incorrect format.

Cyclic strings troubleshooting

These routines pretty well hit the mark for speed, flexibility and memory miserliness that we set up. However line 915 in CINGET shows how you still need to be careful.

CIGHT$ and CID$ are affected by garbage collections when their SUBJECT$ was a Dynamic string. The SUBJECT$ doesn't come through it although your created OBJECT$s are fine. However if you use Cyclic routines wisely you can eliminate garbage collections anyway.

When you're working with array variables don't ever initialise any new non-array variables in the middle of a CYCLIC routine. Make sure all necessary variables are initialised beforehand. Otherwise the array table will move up seven bytes for each new variable initialised - leading to unforeseen consequences.

Finally, do be careful of variable name conflicts between these subroutines and your own programs. Meaningful names like SUBJECT$ and BUFFER$ are useful, but of course they would conflict with plain old SU$ and BU$.

Applications

I've applied these Cyclic routines to my own most important programs. It's a matter of targeting the string functions that are the most conspicuous consumers of dynamic memory. Looped splicing routines are good examples - often they're worth the trouble of creating their own buffer to churn away in, instead of running riot over precious real estate.

I love having all the free memory back and the System doesn't get polluted with lock-up causing garbage. I only wish BHP or Western Mining could process their materials this way.

In a future article I might look at getting a handle on an even bigger consumer of memory and time: GET#. That would be part of a look at using your disk drive to go for the endless realms of "virtual" memory. ❑

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C64:The Column

by Owen James

It seems new software for the 64 is slowing down, almost grinding to a halt. It's not that the 64 is losing popularity, or that every piece of software that can be written, has been written.

It's more the case that software writers and developers are going after the 16-bit market. This is a shame because everyone loses - 64ers miss out on more software, and the companies are avoiding a large market.

It's now up to us to do something. I'm sure that out of all you die-hard 64 addicts there must be a few that know how to program. Even if you can't you surely have ideas for software you would like to see developed. Write to companies. Tell them your ideas or send them a copy of your original program for evaluation. Software companies will go out of their way if they think a program will be a good seller. You never know - they might like it enough to release it on the commercial market.

Potential writers shouldn't ignore the Public Domain market either. Many famous software writers have leaped to stardom after debuting in the PD scene. If you've written a 64 program that you would like to see released under Public Domain status then write to me with details and I'll let the rest of the 64 world know about it.

Some great new hardware products have been released here and overseas recently. I think they prove that the 64 has not been entirely forgotten.

GEORAM and new drives!

Here's something for GEOS users to get excited about - GEORAM. GEORAM is a 512K expansion card for the C64 and 128. As yet I haven't had a first-hand look at what it can do, but if what the advertisements say are true then it will be a sure winner. Constant disk access and slow screen updates are the only things I don't like about GEOS, but this product promises to get rid of both complaints.

CMD Hard Drives for the 64 and 128 have just been released in the U.S. These look fabulous with capacities of 21.5, 48.6 and 104 Megabytes as well as SCSI compatibility meaning that it can be used on Amiga, IBM and Macintosh computers also (great if you ever want to upgrade). Another plus for GEOS users is that GEOS compatibility is built in. It also has a real time clock for time and date stamping of files. This all seems great on the surface, but wait - all is not happy in 64 land.

The problem is that most 64 software is copy protected leaving the problem of how to get the software on the hard disk to begin with. Perhaps if hard disks on the 64 become popular enough then companies might be willing to make unprotected versions of their software available (maybe even a hard disk install option of the type sometimes found on the Amiga?). Apart from this hiccup the product looks promising. Be warned of the fairly hefty price tag, though - OUCH!

Compact Discs?

Compact Discs are all the go these days with many households owning one. Computer companies have realised this and are putting that fact to good use. It's been out for a while in England and has just been released in the U.S. - the CD interface.

This small device allows the CD player to be plugged into the user port of the 64. Software is recorded onto the CD just like a normal disk. The advantage here is that a lot more information can be stored on a single CD than a regular computer disk and the transfer rate is significantly increased. My question is will software companies support this new medium?

It would be no good investing in an interface only to find that no software is available for use with it. At present there are a couple of game compilations available for the interface, but I've heard that the games aren't all that crash hot. Don't think that you can dispose of your drive by purchasing the interface. Remember, you can't write to Compact Discs - only read from them, so you'll need some sort of device on which to store your files.

Upgrading

A lot of people ask me about upgrading from their 64 to an Amiga. Sure, the Amiga is a great computer (I should know, because I use both a C64 and an Amiga) but people thinking of upgrading should ask themselves why they want to upgrade. Have you used the 64 to the full potential, or never really moved into the serious side of it?

I did a lot of thinking before upgrading. My reasons were that I needed a machine with more music capabilities. As luck would have it I discovered the perfect 64 music program after my costly upgrade (with my luck I think that I'd be qualified enough to re-write Murphy's Laws!).

Speaking of cost, have you considered the financial feasibility of upgrading? It's not just the cost of the Amiga itself - it's all the add-ons that you discover later.

If you plan to use the Amiga with a television set then an RF Modulator will be needed (another sixty dollars). Within a half-hour of setting up the Amiga I found the need for more memory ($250 for just another half meg). A second drive is a must (back to spend yet another $250).

No wonder the staff at Computer Spot smile every time I walk in!. Remember those packs of 5 1/4 inch blank disks that you could buy for as little as ten dollars? Amiga 3 1/2 inch disks are normally around $25 to $30 a pack. Welcome to the big league when it comes to software prices. Budget software for the 64 can be bought for around the ten dollar mark. The same (often poorer) quality software on the Amiga will probably set you back around $50.

If you're one of those people who prefer the better quality when it comes to software then make sure you're friendly with your bank manager (and don't have a wife that doesn't understand computers and the costs associated with them)! Prices range from $100 to $700 for one piece alone. These are just some of the miscellaneous costs that I've encountered in my time with the Amiga.

Don't think that I'm trying to put you off upgrading. Many would say the Amiga was worth every cent and besides, when you compare the cost of an Amiga to another computer with those sorts of capabilities the Amiga comes out pretty darn cheap. Still, to the average person...

If you think you're going to sell your 64 to cover the cost of the upgrade then think again. I had this in mind but it wasn't long after my 64 was packed up that I longed to use it again. I've had the Amiga for quite a while now, but still use the 64 (and still rate the 64 as high) as I always have. I consider the 64 to be one of the best computers on the market. Give it a chance to prove itself before you upgrade.

cont. on page 48

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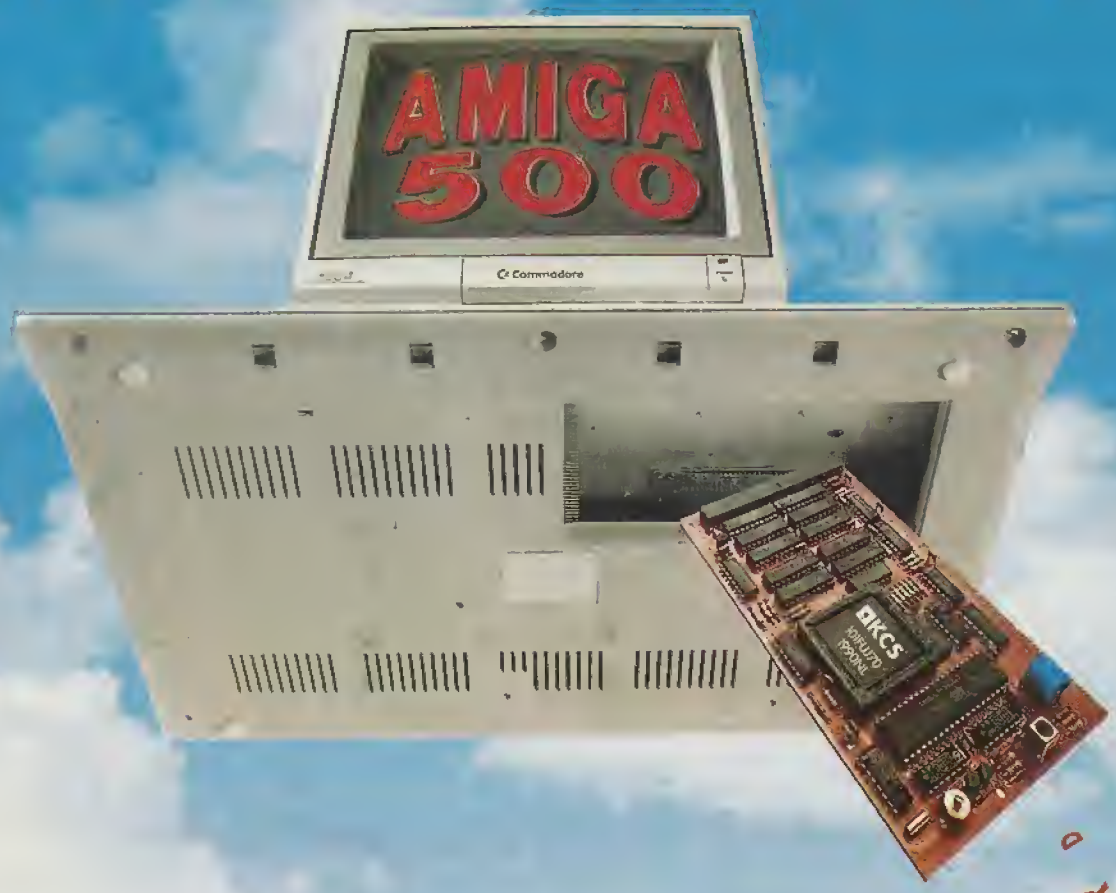

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DEALER ENQUIRIES WELCOME

Tips and Tricks

Following on from last month's theme of disk drives comes some help for corrupted disks. If you have a disk that has read errors etc then begin by making a duplicate copy of the disk. This is VERY important because you may find more damage is done in your effort to restore it. First of all, attempt to validate the disk. This is done by typing:

OPEN 15,8,15: PRINT#15 "V0:": CLOSE 15

After doing this check the disk again for errors. You may find the type of error has changed or possibly that the error has vanished all together. If you have any kind of disk utilities that may try to restore the BAM (Block Availability Map) then give that a whirl. Have a look at the test/utility disk that was supplied with your drive for such programs. One that might restore the BAM is the UN-SCRATCH program. Another source of good disk utilities is the Suite 64 Disk Magazine number 11. It contains many programs to help with disk problems.

If the disk error persists then it may need some more serious adjustments. Often a track and sector editor will be of some use. With these you may be able to read the faulty sector and then re-write it back to disk without errors. There is a more drastic measure that could almost guarantee a fix as long as the error doesn't occur on track $12 (the disk directory).

Format a blank disk. Using a sector editor, copy all the sectors that are related to the disk directory to the blank disk. The directory is normally spread throughout track $12. If unsure of the exact sectors then copy this entire track. Please note that the track and sector numbers I'm giving you are in hex because that's what most sector editors that I use work with. If yours doesn't then just convert the values to decimal.

We are now going to make use of a trick that most 64 users seem not to know about: quick disk blanking. To blank a disk, simply type in the normal format command but leave out an I.D. code so that the command becomes OPEN 15,8,15,"N0:DISK NAME": CLOSE 15. Do this now to the corrupted disk. The process takes only about two or three seconds.

What it does is just clear the directory track and re-write the BAM so that it believes the disk is blank. Don't worry: your files are still safely tucked away on disk even though they don't show up in the directory. Now re-copy the directory tracks from the blank disk back to the original. Check the disk directory to make sure this process worked O.K. If it did then you should find the disk is now error free.

If you turn on your computer one day only to find the 64 is talking rubbish to you (you know, random characters plastered all over the screen) then don't fear: your 64 hasn't been possessed by some Italian virus! Check your joystick auto fire switch. I'll bet that it's either been left on or is faulty. Unplug the stick and you should find that the problem's solved.

Nearly all computers have a New Line button. I'm not talking about the RETURN key; this one will ignore whatever is on the current line and is much easier than pressing the cursor down key and then the cursor left key a few times. Just press and hold SHIFT as you hit RETURN.

Well, that just about wraps it up for this month. Watch out next month for how to customise commercial software to suit your own needs. Remember that as always I want to hear YOUR tips, tricks, comments, suggestions or anything else that is 64 related. Write to me care of the AC&AR at P.O Box 288 Gladesville, 2111.

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Coming to grips with the Amiga's CLI - a tutorial for beginners Part 4

by Andrew Leniart

WELCOME TO THE fourth instalment of our on-going series where we delve into the Amiga's Command Line Interface. Last time we looked at formatting disks, deleting files and learned how to use the Diskdoctor. We also spoke a bit about how we can use wildcards to make life easier for ourselves.

We'll learn a few more commands this issue, as well as expand a bit on a couple of things I talked about earlier. First off, here's a couple of general tricks and tips relevant to some of the commands which we have already learnt.

Tricks with formatting

● To format a disk takes a fair bit of time so some disk manufacturers try to cash in on this by selling pre-formatted diskettes for various brands of computer. Now there is no way that they would sit down and format disks one by one before placing them in the box. Naturally, theyhave some sort of set up that formats dozens of disks at a time. We too can do something similar for ourselves with the Amiga if we have more than one drive.

The Amiga is a multitasking computer, so it is not an unreasonable expectation to think that if we have two or three drives, then we should be able to format two or three disks at the same time. Well, it is possible, and here is one way of doing it, assuming two drives.

First off, using the CLI copy the format command from the "c" directory of your Workbench disk to Ram: Now open another CLI so that you have two of them (CLI's) on your Workbench. CD to ram: in both of them.

Having done that, simply type in "Format Drive DF0: name " in one CLI and "Format Drive DF1: name " in the other and press Return. Follow the instructions given and the end result is the Amiga formatting both disks at the same time.

This trick is particularly handy if you have bought a couple of boxes of blank disks and want to format them ready for later use. Further, if you use a SHELL rather than a CLI, all you need do to get the next two going is press the arrow keys on your keyboard to get the commands up again without the need to retype them. For those lucky enough to have more than two drives, simply open the equivalent amount of CLI's and go through the same steps.

Some of you might have picked up on the fact that it was unnecessary to have all those CLIs open in order to achieve the above result. If you did, well done! You're absolutely right. We could have achieved the same result by using the Run command.

Multitasking with Run

● If we had to open up a NewCLI each time we wanted to do more than one thing at a time with the Amiga, we would soon run out of work space. Besides that, each time you open up a new window on workbench, you're wasting memory. Not a very good practice if you're still stuck with a 512k machine.

Run allows us to execute many tasks at the same time without the need of a window for each task. There are some restrictions, the main one being that if you run something that requires some sort of screen output, not everything will always turn out rosy. For example, it is a waste of time to Run the TYPE command. Try it.

Run Type DF0:s/startup-sequence

See what I mean? The screen very quickly begins to fill with the contents of your disk's startup-sequence, which prevents you from entering any further commands anyway. So the thing to remember is not to RUN anything that requires a window to generate screen output.

But there are plenty of commands that can take advantage of the RUN command and these include commands such as FORMAT, DISKCOPY, COPY, ED and so on. You will soon get the hang of knowing which commands you can or can't RUN as you get more experienced using the CLI.

Back to our Formatting example earlier - we could have achieved the same result by doing this in ONE CLI:
Run Format Drive DF1: <Name>
RETURN
Run Format Drive DF0: Name <Name>
RETURN

and so on! There are other advantages to using RUN as well. Say you wanted to start a program from the CLI such as the Clock on your Workbench. Being an executable file, Clock may be started simply by typing its name in the CLI, ie 1>Clock followed by hitting the Return key.

Doing that however results in a dead CLI. What's a dead CLI? Try the above example and you'll see for yourself. As soon as you start Clock, you can't do anything else with that CLI unless you stop Clock with its quit gadget. If we do this: 1>RUN CLOCK then we get a little message like [CLI 2] and our 1> prompt back to issue further commands. Get the drift . . . ? Play around with the run command and see what you can come up with.

Having discussed the RUN command, it's appropriate now that we should have a squiz at BREAK. Here is its command template:-

Break PROCESS/A,ALL/S,C/S,D/S,E/S,F/S

So what does it do? In simple terms, BREAK stops the execution of any DOS command from any CLI window. For example, if we had two CLIs open and we did a <DIR opt a> in the first window, then we could stop this command from executing further by issuing the command from the second CLI.

This is handy if you happen to change your mind after starting a command which might take a considerable amount of time to finish otherwise, or if you're printing a document from the CLI and decide that you want to stop the printout halfway through. This is a much more elegant method of stopping a printer than say yanking the printer's plug out of the power socket!

The four different switches in the command C, D, E, F are the equivalent of pressing <Ctrl> <c>, <Ctrl> <d>, <Ctrl> <e>, <Ctrl> <f> on your keyboard.

Break defaults to <Ctrl> <c> when issued on its own as above, however you

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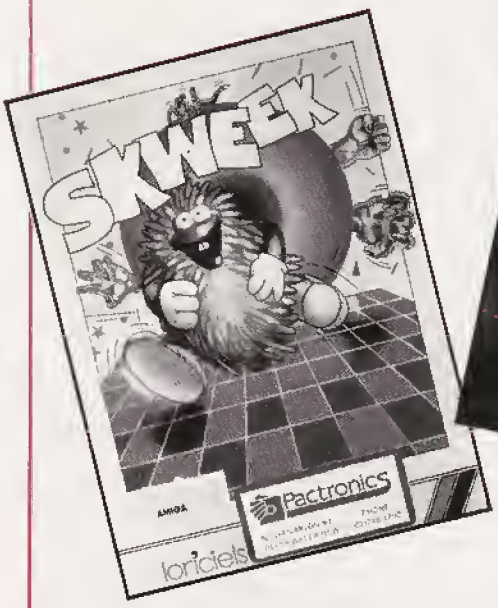

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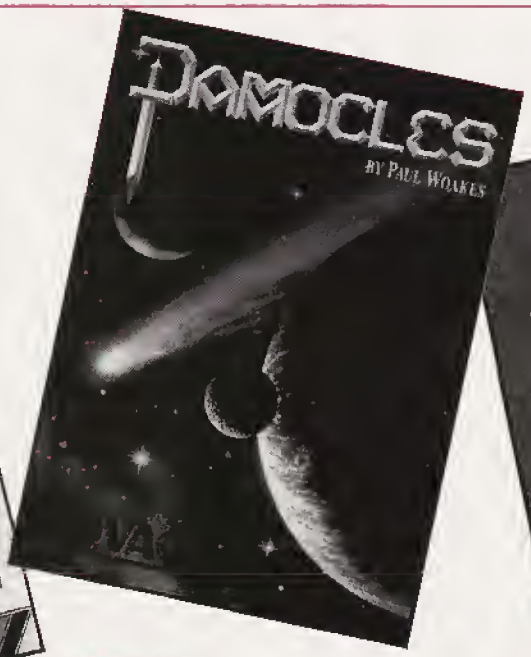

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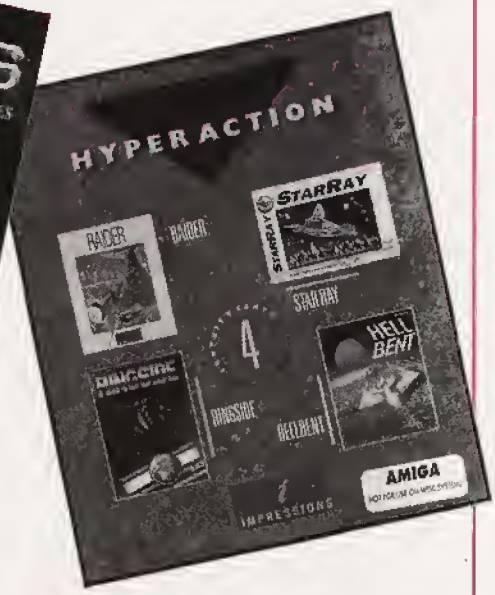

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can select which control code you want sent by specifying the switch when you give the command, i.e. <Break 1d> would have sent a <Ctrl> <D> to task number 1.

All that's good and well, but so far as I'm concerned, I reckon it's far easier to just issue the command with the ALL switch rather than try to guess which code is needed to stop any particular process. Therefore, if <Break 1 all> does not stop what you want to stop, then you know it's not because you used the wrong switch. (If all else fails, there is always the plug in the wall to pull!)

Setting paths

● Moving right along, if you think back to the first instalment in this series, you might remember I showed you how to create a "c" directory in ram: copy some commands into it and assign ram:c as the logical device for the Amiga to look for DOS commands.

What I didn't explain then is that there is another way to get the Amiga to look in ram: or any other disk for that matter to find DOS commands or programs. The PATH command allows us to specify 'paths' which the Amiga will follow to find any given device. The command template is as follows:

Path ,,,,,,,,ADD/S,SHOW/S,RESET/S

Typing PATH on its own without parameters (or switches) results in the command showing the current directory and defaulting to the SHOW switch. As an example, here is something like what we might see if we just booted up with an unmodified Workbench 1.2 and typed PATH.

Current Directory A500 WB 1.2:System
A500 WB 1.2:Utilities RAM: C:

So what does it all mean? Well, the list shows the order that DOS will search for a file or command when you issue one. First off, it searches the current directory. Don't forget we can specify the Current Directory with the CD command. If it can't find what it's looking for there, it will then look in the next entry down the list being the System directory and so on until whatever it was you entered was found. If DOS can't find what it's looking for, you will eventually get an "Unknown Command" error message.

Being able to specify paths is a handy little option if you happen to use something on your disk quite often and it's kept in a directory separate from the Root directory. Let's say for argument's sake that we often use a directory utility called SID which we keep in a directory we've called "DirUtes".

Normally, to be able to start SID from the CLI, we would have to issue the command DirUtes/SID. In this way we are specifying the 'path' DOS should follow to find SID. However, if you enter the command <Path sys: Dir UtesbAdd> beforehand, then all you would need do then is just type in SID and DOS will automatically look in DirUtes for it.

As I was saying earlier, the Path command is especially useful if you want to place commands in the RAM: disk. To make life easier, instead of assigning c: to ram:c as I told you in the example in Part 1, just issue the following command

PATH RAM:C ADD

Now DOS will look in ram: each time you issue a command before it spits the dummy and tells you it can't find what you want or that it needs the blasted Workbench disk when working with one drive. Neat, eh?

Finally, this command is most useful when used in the startup-sequence of your work disk. For those that may not know, the Startup-Sequence is a script (or batch) file in the "S" directory of a bootable disk that the Amiga executes each time the machine is re-booted or first started at the hand prompt on your screen.

You can manipulate this file to create the ultimate work environment for yourself, and I've written an article on how to do just that. Write to the Editor of AC&AR to ask which issue it was in if you are interested. Pester him for it if it has not been published yet so that you can learn and I can get my cheque! (Er, sorry, boss . . .)

Getting back to the original subject, the final option available to us with the Path command is the RESET switch. The RESET argument does what the name suggests and removes a maximum of 10 paths which might have been set at any given time. All paths except the current directory and the c: device are removed (or deleted).

Amiga DOS errors

● When you work frequently in the CLI, it is inevitable that you will from time to time get the occasional error message. I say inevitable because error messages occur when something as simple as a spelling error is made. I'll explain what these error messages mean shortly but firstly, here's an example of what I'm talking about:-

Enter the following in a CLI exactly as shown here.

Type s/startup-sequense

and hit return. The Amiga responds with the following message->

"Can't open s/startup-sequense"

We can ask the Amiga why it can't do what we asked by typing the command "WHY"

The Amiga answers that the

"Last command failed because Error code 205".

To find out what Error code 205 is, we now must use another command, namely FAULT. So we enter

"FAULT 205"

and the Amiga responds with

"Fault 205: Object not found".

In case you haven't noticed, I should point out that the reason the Amiga could not find the startup-sequence is because it was deliberately misspelled. Have another look . . .

Now the mentality behind the thinking of setting up the above procedure never ceases and continues to amaze me to say the least! Why in the world the Amiga's programmers needed to go all this trouble to make finding out an Error meaning is beyond me.

Surely it would have been much simpler to just display the Fault string at the WHY step in the procedure rather than display an Error code to have to look up. Perhaps someone out there knows the answer to this and would be willing to educate me?

Anyway, we now know that the two commands WHY and FAULT are available to us to find out why something might go wrong. WHY gives us an Error code to look up and FAULT converts the Error Code to some descriptive text.

I should point out that not all Error codes have descriptive text available for them when queried with the Fault command. If this is the case, what you will get will be something like the following:

"FAULT 10: ERROR 10"

Not very helpful I know, but to coin a phrase from the wellknown TV journo that many people just love to hate, that's life!

In light of the above fact, I thought it

might be appropriate to list some of the more common Error codes and their meaning for easy reference, so I've listed the more common ones below:

103 INSUFFICIENT FREE STORE : This basically means that you do not have enough memory (RAM) in your Amiga for it to be able to perform the task you asked of it. Either spend some bucks on a suitable memory expansion to solve this problem or else close up all unnecessary windows etc to try to free up as much ram as you can.

104 TASK TABLE FULL : You are trying to run more tasks at the same time than is possible on the Amiga. The limit is 20.

120 ARGUMENT LINE INVALID OR TOO LONG : This usually means you made a mistake when using a commands arguments or switches.

121 FILE IS NOT AN OBJECT MODULE : This error usually occurs if you try to run or execute a file which is not executable (ie. a text file). If you get this type of error, try 'type'ing the file in question.

202 OBJECT IN USE : The file (or sometimes the directory) you tried to access is being used already in such a way that you can not use it until that process is finished. In other words, wait your turn, buster!

203 OBJECT ALREADY EXISTS : This error pops up when you try to rename a file, command or create a directory with a name which already exists. Choose a different name for your file or directory; even a slight alteration like a full stop on the end of the name is enough to keep DOS happy.

204 DIRECTORY NOT FOUND : Self explanatory really. DOS could not find the directory you asked for. If you are sure the directory exists, make sure you specified the correct path to DOS when asking for it!

205 OBJECT NOT FOUND : Same as 204 except that this one refers to a device or file name rather than a directory.

206 INVALID WINDOW : This one occurs if you specify unsuitable information when trying to create a CLI of a certain size and name using the CON: device option of NEWCLI.

210 INVALID STREAM COMPONENT NAME : You have probably made a mistake when specifying a filename, either an invalid character in the name or entered a name that was more that 30 characters long. DOS will only allow you to use a maximum of 30 characters for file names.

212 OBJECT NOT OF REQUIRED TYPE : The file you indicated could not be used by the command or program you tried to use on it. Like trying to RUN a text file for example.

213 DISK NOT VALIDATED : This is a nasty one which can occur if DOS is not able to validate the disk you tried to access. Take the disk out and re-insert it to try again and if that fails, get the DiskDoctor on the job. (See Part 3 of this tutorial to find out all about using the DiskDoctor!)

214 DISK WRITE-PROTECTED : You're trying to write to a disk with the protection hole in the upper right corner open, dum-dum! Close the hole and the Amiga will then be able to write to the disk.

215 RENAME ACROSS DEVICES ATTEMPTED : You've tried to be clever and use the RENAME command to move a file over to another disk or device. This is a no-no and the Amiga won't have a bar of it! Use COPY and DELETE to achieve your goal instead. You can only use RENAME to move files around on the same disk.

216 DIRECTORY NOT EMPTY : This happens if you try to delete a directory when it still contains some files in it. You must empty a directory first before DOS will allow you to delete the directory itself.

218 DEVICE NOT MOUNTED : You've asked DOS to access a device such as a disk that was not in the drive or a printer which is not hooked up. You can use the INFO command to find out what devices are mounted at any given time.

220 COMMENT TOO BIG : This occurs when using FILENOTE to add a comment to a file and you try to use too many characters. You can use a maximum of 80 characters in a file comment.

221 DISK FULL : You guessed it! The disk you want to write to has run out of space and will not accommodate all the data you want to put on it. Time to format another blank disk!

222 FILE IS PROTECTED FROM DELETION : Somewhere along the line, the delete flag has been set to protect this file from accidental deletion. (Check out Part 2 of this tutorial for more information on Protection bits).

223 FILE IS PROTECTED FROM WRITING : Similar to 222, this file is protected from being written to!

224 FILE IS PROTECTED FROM READING : Again this has to do with Protection bits, this time the read flag has been cleared and DOS won't allow you to read the file until you re-set the flag with the help of the PROTECT command!

225 NOT A DOS DISK : DOS can not read the disk you've inserted in the drive for any one of a few reasons. It might be corrupt, a blank un-formatted disk or even a KickStart disk.

226 NO DISK IN DRIVE : Similar in a way to error 218, however this time DOS recognises that the disk you wish to access is mounted, it's just telling you that it is not in the drive!

So there you have it. The above is by no means a fully detailed explanation or listing of ALL the error codes which DOS might throw at you, however all the most common ones that you might get are there.

Well, that brings us to end of yet another journey into the world of the Amiga's CLI. Next issue, we'll be looking at a few more commands and tips for the CLI and we might also touch on the subject of the "Amiga Dos Replacement Project" (ARP) available freely in the public domain. This is an excellent effort by the authors which opens up a whole new ball game when working with DOS commands.

So stick with us and you never know what little mysteries might be revealed in future issues. Till then, keep on experimenting with what you've been shown to date and have some fun. Feel free to send any queries, suggest topics and even spare money to the editor (addressed to ME!) anytime.

Till then . . .

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THE HARD DISK CAFE

The Geo Column

by Bruce Lyon

Last time we reviewed *Geochart* from a user perspective. This month in our user section we'll be looking at some tips for using *Geos* in ways that are not immediately obvious. In the programming section, we'll be discussing one of the more interesting aspects of the *Geos* Kernal, which gives *Geos* its very powerful characteristics - including multi-tasking (who thought this only happened on the Amiga?).

In coming issues, we will be looking at the most impressive software for the end-user in the *Geos* range, *Geopublish*. This piece of software is truly amazing for the features and price, even compared to *Ventura* on the IBM. Additionally, we will be covering using disk drives other than the 1541, Ram drives and many other goodies.

User issues

Perhaps you have just spent some lofty moments composing some text. Maybe a letter, some minutes from a committee meeting, an agenda, advertising blurb, invitation, or other item which requires multiple copies. The question arises, apart from the photocopier, how can you print multiple copies using *Geos*?

The answer is not immediately obvious. *Geowrite* does not provide any direct facilities to do this. You can only print one copy at a time. Thirty copies would be rather painful! But wait, there is an easy solution! I have used this technique many times.

If you have purchased *Deskpak 1*, or have *Geos v2.0*, you will have a copy of the utility, "Geomerge". This beaut little utility provides a specialised print merge facility. This means you can merge say, a list of names and addresses, with a letter, having multiple copies of the letter with the names and addresses inserted at defined places in the letter.

You define these places using the construct <<tagname>> where << is two 'less than' signs in a row. A "tagname" is a label for the data you want merged, eg: firstname, lastname etc. In the merge data file (eg names and addresses file), each data item is on a separate line, and a complete set of data (a record) is separated by an asterisk (*) on its own line. I won't go into any more detail here, as the manuals for *Geos v2.0* or *Deskpak 1* explain all, to the usual Berkeley standard.

Normally, you make up your 'form' letter with appropriate insertions of <<tagnames>> where you want the data merged. But you don't actually need to insert any <<tagsnames>> labels in your letter, and what's more you don't need to have any data in the merge data file. *Geomerge* doesn't care. It will just continue to print the letter for as many asterisk separators as it finds in the data file. So there is the trick. Create a short *Geowrite* file as follows :

```
<return>
*<return>
<return>
*<return>
<return>
*<return>
<return>
*<return>
```

Note the sequence '<return>' means the return key, not typing the text. This little file, when used as the merge data file, will produce three copies (one less than the number of asterisks) of the source document. Voila! Just make a file with as many asterisks plus one as copies required! Use the *Geowrite* cut and paste facility to make this task easier.

There is nearly always an easier way to achieve a result, or was that many ways to skin a cat...

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A4 paper and GEOS

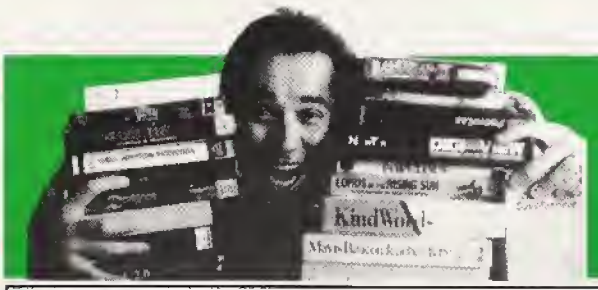
Another tip when using *Geos*, you will find all the printer drivers supplied assume 11 inch paper (American standard - 66 x 1/6 inch line a page). When you are buying your continuous paper, do NOT buy A4, as this equates to about 70 lines, and hence the *Geos* documents will 'page slip'.

Unfortunately, there isn't an easy way to adjust the page length to 70 directly, and 66 line paper is readily available from computer supply shops anyway. Actually, I will be detailing a way of setting the line length to 70 or some other figure, but this will be in a future issue of the programming section.

You can still use single sheet A4 quite successfully, but you must select the single sheet printing option to allow the printer to pause for each sheet, and you must manually feed each document through (okay for short runs only!).

One possible way around this, is if your printer allows a hardware dip

Cont. on page 60



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Multitasking processes

Firstly, what is multi-tasking? Simply put, it is the apparent ability of a single CPU (in our case the 6510) to run more than one program at once. What is in fact happening, is that at any given moment, the CPU is only running one program, but because this happens so quickly, and most CPU programs are I/O bound (that is waiting for slower I/O devices), the CPU can be made to switch from one program to another quite separate and distinct one and run it for a while. Then jump back to the first one and so on. *Geos* provides the basic facilities needed to allow this 'task switching' to take place.

When we think of a program, we think of a related set of instructions of program code deliberately strung together so as to produce the desired program function. When that program runs, it is referred to by *Geos* as a process. Without *Geos*, to write another quite separate program that ran on the same machine at the same time as the first one would certainly be possible, but be quite complicated to ensure no conflicts, and quite hard to debug. All that changes with *Geos* behind you.

Most processes will either be time based or event based. For example a wordprocessor waits for a keyboard event (user typing), processes it by printing it or taking some control action, and waits again for another keyboard event. A background time-based process example might be one that wakes up regularly to check the X & Y position of the mouse, and change the cursor picture to the relevant context when it is over a certain part of the screen.

In both cases, if you were writing a more traditional style program, you would have to implement both the time delay code, and set up the loops yourself. With *Geos*, you simply write some straight line code to DO whatever action is required when the event or time condition has been reached and then RTS (return). *Geos* takes care of detecting the event, looping, working out time delays and so on. This greatly simplifies coding responsibility and difficulty. You have more time to sort out the issues involved in actually doing the processing itself.

The base processes under *Geos* are thus basically subroutines than run every so many interrupts (ideally). The *Geos* kernal decrements the process time delay registers, and when they timeout it dispatches the service subroutine code. So your application basically has to provide service routines, and time data in the 'process definition table'.

Processes are firstly initialised, where a timer and flag byte are assigned. The process data are given in a simple table format as follows:

```
        ProcessDefTab:
.word ServiceRoutineA ; address of routine code
   .word N            ; time delay in interrupts (50 per sec)
.word ServiceRoutineB ; address of routine code
   .word N            ; time delay in interrupts (50 per sec)
```

Processes are initialised by calling doing a JSR to the Kernal routine InitProcesses, passing the address of the ProcessDefTab, and number of processes. This does not actually activate the process. This is done by RestartProcess, which unblocks or unfreezes a process by resetting its timer, removing any flags preventing it from running, and allows the Kernal to manage the process in the normal way.

A process can be blocked with BlockProcess or unblocked with UnblockProcess. This prevents the service routine being called, although timers still decrement. A similar action is FreezeProcess and UnfreezeProcess, which actually prevent process timers from being decremented, thus preventing them being dispatched.

This is also a facility to allow processes to put themselves to sleep for a specified period. Using Sleep should be done with care. I recommend steering clear of it unless you really know what to do. The effect can be achieved in other ways.

As you've probably already gathered, a process can either be runnable (ie: executing currently or awaiting a timeout), blocked or frozen. The difference between frozen and blocked is a bit marginal, and which method you might use depends on your application. Some flexibility exists.

There are some interesting issues that occur when multi-tasking programming. How, for example, do you get both programs to talk to each other if needed? For example, one program might be reading an input stream from somewhere, and another might be using that data. Inter-task communications can be achieved by using defined memory buffer exchange areas. One other thing is needed for correct inter-task communications - a protocol. This is best achieved as follows.

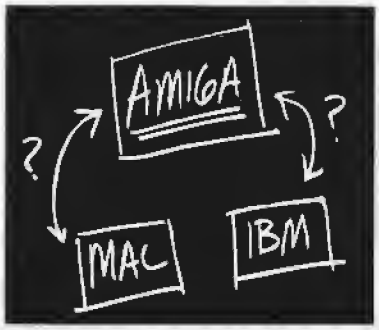
One task should always generate messages, and the other should always be a receiver (producer/consumer). Some flag bits should be organised to allow access permission to write to the buffer, and access permission to read from the buffer. Let's assume task A is sending to task B and says: can I write to the buffer yet? (ie is write permission reset). If not, block oneself. Task B goes to read the message buffer by checking if the read permission is reset. It will only be reset by the writing task. Task B sets the read permission, resets the write permission flag and unblocks task A. Task A writes to the buffer and resets the read permission, sets the write permission, and attempts to unblock A.

The beauty of multiple processes is the ability to divide up your programming problem into lots of little simpler ones. Implement the code for each item by itself, and allow the operating system *(Geos)* to glue all the modules together.

Some examples of programs with multiple tasks might be: games where one task scrolls a background, whilst another moves the spaceship, whilst another keeps the score. Or a home monitoring system where one gets some data from the user port, another displays it on a screen, and another handles user requests. The posibilities are endless. Most of the *Geos* applications employ multitasking to varying degrees to achieve their functionality.

If you have any questions about *Geos*, whether they be technical or otherwise, that you want answered please write to me care of this magazine (please do not telephone), and I will answer them for you.

Well, bye for now. Next time we will be discussing the *Geos* filing system, especially with regards to variable length indexed record files, a cross between CBM relative files and SEQ files. ❑



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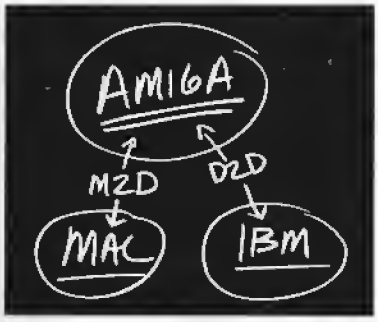

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C64 Sound and Graphics - Working with User Defined Characters

Last month Greg showed us how to define our own custom characters. Now we take a look at how to put them to work!

Once you have created a new set of characters, there are two ways of saving them for later use. The first is to add the corresponding DATA statements to whatever program you are using, and the second is to save them directly to tape or disk and load them back into the same place in RAM when they are next required.

Program: DATA MAKER

This program will read any area of RAM memory and convert the contents into a series of DATA statements. It may be used for character data, sprite data, or to convert machine code programs to DATA statements.

```
10 REM  (C) GREG PERRY, BRISBANE 1984
100 REM  DATA MAKER
110 REM  CONVERTS ANY AREA OF RAM
TO
120 REM  DATA STATEMENTS
130 INPUT"[CLR]START[SPACE]ADDRESS
[SPACE]IN[SPACE]DECIMAL";AD
140 INPUT "END[SPACE]ADDRESS[SPACE]
IN[SPACE]DECIMAL";EA
150 INPUT "DATA[SPACE]START[SPACE]
LINE[SPACE]NO";S
160 PRINT "[DOWN4]"
170 POKE 820,AD- INT (AD/256)*256: POKE
821, INT (AD/256)
175 POKE 822,EA- INT (EA/256)*256: POKE
823, INT (EA/256)
180 GOTO 240
190 S=PEEK (252)*256+ PEEK (251)
200 AD=PEEK (820)+ PEEK (821)*256
210 EA=PEEK (822)+ PEEK (823)*256
220 IF AD>EA THEN PRINT "
[DOWN5,SPACE]FINISHED": END
230 PRINT "[UP,SPACE38]"
240 PRINT S;"DATA[SPACE]";
250 FOR AD=AD TO AD+4
260 IF AD>EA THEN 280
270 PRINT PEEK (AD);"[LEFT],";
280 NEXT : PRINT "[LEFT,SPACE]"
290 POKE 820,AD- INT (AD/256)*256: POKE
821, INT (AD/256)
300 PRINT "GOTO190[UP3]";
310 POKE 198,2: POKE 631,13: POKE
632,13
320 S=S+10
330 POKE 252, INT (S/256)
340 POKE 251,S- INT (S/256)*256: END
```

Character Saving and Loading

To perform the second option of saving the character data directly to tape or disk is relatively simple. When the command SAVE is used, it normally dumps out to the disk or tape the area of RAM containing the BASIC program.

The pointers to this area are:

43 and 44 Start of BASIC RAM

45 and 46 End of program/start of variables.

To save another RAM area to tape or disk, we must temporarily change these pointers to define the new area, SAVE the contents, then reset the pointers to normal.

For example, the modified character set we created above starts at 12288 and extends to 13312. Use the following method to save this area of memory to disk.

First, CLEAR the screen. (Use RUN/STOP RESTORE.)

Find the end of the current program with

X=PEEK(45): Y=PEEK(46): PRINT X,Y

Set variables to the start and end of the RAM to be saved by

A=12288:B=13312

reset start address:

POKE 43, A - INT(A/256): POKE 44, INT(A/256)

reset end address

POKE 45, B - INT(B/256): POKE 46, INT (B/256)

then save character set to disk with

SAVE"CHAR SET",8

(use SAVE"CHAR SET",1 for tape)

and when finished, reset the pointers by

POKE 43,1: POKE 44,8

POKE 45,X: POKE 46,Y

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This could easily be made into a small program.

When you wish to reuse an old character set, it can be loaded from disk into RAM simply by:

LOAD"CHAR SET",8,1

(use LOAD"CHAR SET",1,1 for tape)

Within a program use the following lines:

```
100 C=0
110 C=C+1: IF C=1 THEN LOAD"CHAR SET",8,1
```

Here, the C is a counter to ensure that the program does not get into a continuous loop loading the character set. When a LOAD command is used within a program, after the load is completed the operating system goes to the first line of the program and starts again, effectively a GOTO first line.

Use of the ",1" at the end of the LOAD statement tells the C64 not to "relocate" the following data into the normal BASIC area from 2048 upwards, but to load it into the area of RAM from where it originated.

The last step is to change the VIC II character pointer as above (POKE 53272, 29) to use the newly loaded character set.

Character Memory Locations

As we saw above, the VIC II chip can access any one of four BANKS of 16K RAM for its video information, with the character pointer being set in bits 3-1 of location 53272. This pointer can be set to one of eight 2K areas within this 16K BANK. The actual memory locations of these character areas are always referenced to the first memory location of the BANK. For example, for BANK 0 this is location 0. In this manner, the character pointer acts as an "offset" pointer.

Use the following formula:

POKE 53272,(PEEK(53272) AND 240) OR CB or POKE 53272,16+CB where CB, the character base offset is

Start of CB	Comment	Usable BASIC Character set for BANK 0 program space
0	0	NOT AVAILABLE
2048	2	Start of program RAM
4096	4	ROM Image
6144	6	ROM Image
8192	8	** usable 6144
10240	10	** usable 8192
12288	12	** usable 10240
14336	14	** usable 12288

To emphasise, without moving the start of BASIC, only the four locations from 8192 upwards can be used in BANK 0, the normal setting.

There are further problems. In the program above, the new character set has been placed in the block of RAM from 12288 to 13312 using CB = 12. The problem is that the BASIC RAM (where the program and variable data are stored) can use part or all of the RAM from 2048-40959. This means that sooner or later, as you use larger programs, the program will overwrite the character pattern. The same problems will arise when using high resolution graphics.

There are four effective ways around this problem:

1. Only use small programs. (Poor but easy solution.)
2. Protect the character set from being overwritten. (Fair, but thislimits the amount of BASIC space as above.)
3. Move the area of RAM used by BASIC. (Good.)
4. Change BANKS and move the character set (and the screen RAM) to another area of RAM which is not used by BASIC. (This is the best solution but is also more involved.)

Changing BANKS is a complicated operation and will be discussed later chapters, so let's examine the other three options in more detail.

If you use the highest character location of 14336 (CB = 14), this leaves the area 2048-14337 (equal to 12K) for BASIC programs and variables. With small programs you will probably be able to initially survive with space, but the character set should really be protected from BASIC. This is done by setting the highest BASIC RAM address pointers in locations 55 and 56. These are normally set to 0 and 160 respectively.

To limit BASIC RAM to 12K:

```
POKE 55,0: POKE 56,56: CLR
```

Now a check of the free memory space with PRINT FRE(0) shows 12285 bytes free. Other values can be set in a similar manner.

To reset end of memory to normal (39K)

```
POKE 55,0: POKE 56,160: CLR
```

Option 3 above is the best and easiest general-purpose method. The start of BASIC RAM pointers are in locations 43 and 44. (Normally 1 and 8, pointing to location 2049.)

From the table, you can see that, provided BASIC program RAM is moved, we could put the character set at 2048-4095, using a value for CB = 2. This is the lowest available location which may be used, since, because of the ROM "images", the next available location would be 8192. In order to use 2048 upwards for the character set, BASIC program RAM must be moved up in memory to 4096. The ROM "images" do not affect BASIC programs.

To relocate BASIC RAM to 4096-40959

```
POKE 43,1: POKE 44,16: POKE 16*256,0: NEW
```

A general formula using the above table as a guide and CB equal start of BASIC pointer is:

```
POKE 43,1: POKE 44,CB*4: POKE CB*4*256,0: NEW
```

You must POKE the bottom location (here 16*256) to 0 before the NEW command or a SYNTAX ERROR will be generated.

Check FRE(0) to see how much RAM is available. We still have 36K left for program and variables.

If used, these POKEs must be done before entering a program either from the keyboard or disk/tape. Most programs will now load directly into this new RAM area. (A similar method may be developed for disk users to LOAD the directory (LOAD"$",8) into upper memory without overwriting the current program.)

Any programs which use only BASIC will work correctly in both this reduced memory format as well as in the normal format.

To reset start of BASIC RAM to the normal 39K format:

```
POKE 43,1: POKE 44,8: POKE 2048,0: NEW
```

If you wish to make extensive use of programmable characters, find a good character editor program. For example, one of the public domain Commodore Character Editors eliminates all the hard work of the calculations and allows you to edit up to five different character sets on the screen and save each set to disk for use in your own programs.

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The Mega Entertainment Section

Edited by Phil Campbell

That's Entertainment

All the latest news and views from the world of entertainment ...

Computer art in Kempsey Art Show

➡There's nothing more entertaining than having a quiet doodle with *Deluxe Paint III* - and now you've got the chance to show off your talents. Two sections featuring computer art have been included in the 1990 Kempsey Shire Art Prize exhibition, alongside more traditional mediums. Professional computer artist Graham Whittle will judge the exhibition, which will be open to the public between October 9th and 12th in the Civic Centre, West Kempsey. A prize of $300 is being offered in the Open Section, with council acquiring the winning work for its community art collection. School students are being encouraged to participate in a special section with awards of $75 and $25 for first and second prizes respectively.

Entry forms and information may be obtained from The Art Secretary, Kempsey Shire Council, PO Box 78, West Kempsey 2440. For further information, contact Meg Pamplin on(065)626077.

MindscapeTennis Competition Winners

➡Boy, what a response to our last competition! Seems like everyone wants to play tennis, especially Mindscape's *International 3-d Tennis*! To all those wishful thinkers who thought we'd be silly enough to accept efforts like "E.T." for "Extra-Terrestrial" and "N.E." for North East, think again!

After much head scratching and sifting of entries, these are the winners chosen by our celebrity judge (the Editor's wife):

Congratulations to **Val Hutchison** of 11 Dunrobin St Shepparton, Vic 3630, who managed to produce 41 words, all of which are confirmed by the Chambers 20th Century Dictionary. An Amiga version of *International 3-D Tennis* is on the way.

Mandy Bailey of 30 Luckhurst Drive Mandurah WA 6210 is in second place with 38 words, and **David Jordan** of 5 Murrami Ace Caringbah NSW 2229 is in third place with 37. Watch your mailboxes for Amiga versions of *International 3-D Tennis* too, courtesy of the generous folks at *Mindscape.*

Tom's Top Ten

Tom Quealy tells us what's hot and what's not, with this month's sales charts direct from the Computer Spot's on-line statistics ...

AMIGA	COMMODORE 64
1. TMNT	1. Pro Tennis Tour
2. Kickoff 2	2. Chase HQ
3. Midwinter	3. Fun School Education
4. F-29 Retaliator	4. World Cup Compilation
5. AMOS	5. Arcade Champions
6. Pro Tennis Tour	6. Ghouls 'n' Ghosts
7. Leisure Suit Larry 3	7. F-14 Tomcat
8. Fighter Bomber	8. F-18 Hornet
9. Sherman M4	9. Project Stealth Fighter
10.Shadow of the Beast	10.TV Sports Football

Hints and Tips

Keep those hints and tips rolling in folks! Send them to Phil Campbell, PO Box 23 Maclean NSW 2463. Please don't send game maps! At present we've got no way of printing them!

Amiga

Dragons Lair II
- Escape from Singe's Castle

A special treat for fans of *Dragon's Lair II!* Here's the first instalment of Juris Graney's solution to the game:

Scene 1 - The Tilt.

Dirk the Daring will start to walk forward. Then the side panels will start to fall away from his feet. Go back,when he lands, go Forward, then before he lands go forward again. If the room at the start was titled left go left and if it was tilted right go right.

Scene 2 - The Horse.

Dirk the Daring will start walking towards a mechanical horse. When he gets on the horse will take off. If the walls are glowing on the right go left and if the wall is glowing on the left go right. This will happen at least three times.Then the horse will start to fall.

If the horse is on the left side of the screen go right and if the horse is on the right side of the screen go left.

Scene 3 - The Ropes.

If Dirk enters from the left side of the screen go left when he says "Oh Oh". Then the screen will change to a close up of him. Push up and left. Do this several times and always remember to push up or he will fall.

Scene 4 - Smithee.

Dirk will be standing there and there will be a sword on his left or right.Push the button when the sword starts to rise and press it again when the sword is about to attack you.

Scene 5 - The Anvil.

This screen will happen in the same sequence as the Smithee. If the glowing anvil is on the right side of the screen go right and if it is on the left side of the screen go left. Dirk will run up and jump on an anvil and scamper up to the next screen.

Thanks Juris ... watch out for more next month!

Sim City

Matthew Mantle of Gladstone, Qld, sent this top tip for my favourite game. If

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you need funds and things are tight, simply hold down the shift key and type FUND to receive $10,000. But be warned! If you type this too many times in a row, there'll be an earthquake.

The Untouchables

Also from Matthew Mantle comes the following. Type "SOUTHAMPTON GAZETTE" on the title screen. Now press F-10 on the startup screen of each level to go on to the next.

Commodore 64

Giana Sisters

Press NRMA to skip through the stages of the game - if the trigger on the joystick is pressed at the same time, the stages only take one second each to go by.

Chase HQ

Cartridge owners only! "The Iceman" advises that if you haven't yet got a cartridge with a "freeze/restart" facility then you've got rocks in your head. He uses a Power Cartridge, which cost less than $50, and he reckons "it will still be in use even after most games are forgotten."

After all that, get your cartridge, freeze Chase HQ and POKE 36702,44 for infinite turbos for your Porsche.

Rygar

Likewise for Cartridge owners, freeze *Rygar* and POKE 3819,169:POKE 3820,0:POKE3821,234 to disable sprite collisions and tour all 17 levels.

Ghouls 'n' Ghosts Map

Adam Lee has gone to a great deal of trouble to produce a wall chart sized map for *Ghouls'n'Ghosts*. It's a brilliant piece of work. Sadly, we can't print it - for one thing, it's in pencil, which is difficult to reproduce. For another thing it's about 10 feet long.

Help Wanted!

More and more gamers are writing to ask for help. If you can offer and advice, hints, pokes or code words to the following gamers, please let us know.

Yokeching Chan, from Sydney NSW, is looking for cheat modes for the Amiga versions of *R-type, Rolling Thunder, Xenon,* and *Arkanoid - Revenge of Doh.*

Also, the *Double Dragon* cheat (typing r u calling my pint a poff! on the title screen) doesn't seem to work. Any idea's?

Jan Taylor from Pooraka, SA, is also looking for help with *Arkanoid II.*

Tony Egorov of Holland Park Qld has found to his dismay that Phil Nichol's Shadow of the Beast hint in June ACAR doesn't work.

Tony is a desperate man. If you can help him, write to him direct at 62 Victor St, Holland Park 4121, Qld.

Amos Burbidge of Hackham West, SA is looking for a cheat for *Xenon II.*

Adam Lee, who mapped level 1 and 2 of *Ghouls'n'Ghosts,* can't get through level 3. If you can help him with cheat or Poke for the C-64 disk version, write to him at 81 Northcote Tce, Medindie 5081 SA.

Letters to the Editor

Address your entertainment letters to Phil Campbell, PO Box 23 Maclean NSW 2463. You can also fax your letters, hints and high scores to me on 066-452060. but please, please, please don't send letters about printers and other boring stuff! they belong in the other end of the magazine ... the end you read last!

Dear Phil,

➡I was quite surprised and amused to find my first name splashed numerous times across page 21 in the large advertisement for the AMOS program, and mentioned here and there throughout the July issue of your magazine. It produced a good laugh when I showed it to my friends at school. I've included some cheat modes and high scores - I hope you can use some of them. A great mag as well guys - one whinge though, how about a few more colour pics for your game reviews.

Amos Burbidge,
Hackham West, SA

Ed: *Sorry we didn't ask permision to use your name. It's no laughing matter really - maybe you should sue somebody for breach of copyright. On the other hand, I guess it's a bit of an honour that they named the best game authoring system in the world after you. I just can't figure out why they didn't call it PHIL or something a bit more tasteful. Anyhow, Amos, we're using as much colour as we can at the moment - hope you've noticed the improvement over the last few months in response to letters just like yours.*

Dear Phil,

➡Here's my high score for CRAZY CARS - 67,252,310. I hope this makes the Amiga Hall of Fame, because it took me ages to get it. Your section is the best.

Jason Pearson,
Streaky Bay SA

Ed: *Only 67,252,310? No way. Back to the drawing board Jason, but thanks for mentioning this section is the best. Otherwise I wouldn't have printed your letter!!*

Dear Phil,

➡I want to say you've got an excellent magazine here. It's got everything that a computer owner needs.

David McLeish,
Penshurst NSW

Ed: *You want to say we've got an excellent magazine? Go right ahead. Say it.*

Dear Phil,

➡I am writing to ask for your opinion of the C-64 emulator for the Amiga 500. Is it worth the price? Will it allow all C64 programs such as *Pools of Radiance* and *Curse of the Azure Bonds* to be played on the Amiga? Will I need a 64 disk drive or any other piece of hardware?

David Fraser,
Casula NSW.

Ed: *It's been a while since I've investigated C-64 emulators, and things may have improved lately. The fact is, though, that most emulators just can't handle the pace with most sprite based C-64 games. Text applications are OK, though even then speed is a bit of a problem. You will definitely need a C-64 disk drive - how else will you load your C-64 disks? Well, maybe you could fold them and stick them into the Amiga slot, but I suspect that wouldn't work. Games like Pools of Radiance and Curse of the Azure Bonds would have a better than average chance of working OK, because like all RPGs they don't rely totally on arcade style action. As to whether an emulator is worth the money, it's up to you. If you haven't already got a 1541 drive, I seriously doubt it.*

Dear Phil,

➡Congratulations on a fine entertainment section. I am in fact writing to warn readers of a potential danger in the computing world. In January I picked up a copy of your competitor "Megazone" (which I now regret) and decided on the spur of the moment to send away for a subscription. My cheque for $39.50 was cashed some days later. Approximately three months on, I had received nothing, so wrote a letter questioning the whereabouts of my first issue. Weeks later -

nothing. By then the second issue was in the newstands, and it hasn't come either.

With ACAR I have received nothing but prompt attention to anything I send in. If a magazine such as yours can be run so well, why can't the others? I hope this will serve as a warning to others ...

yours sincerely,
Keir Sooby,
Darlington WA

Ed: *Phew! Let me point out that letters to the editor do not necessarily reflect the views of the management of this magazine. Naturally, we think Megazone is just wonderful. But we certainly appreciate your kind words about ACAR, and we'll do our best to keep up the good work.*

Dear Sirs,

➥It had to happen. My brand new Amiga 2500 has a glitch that I can't seem to overcome. It already had the hard disk formatted when I got this beautiful piece of hardware, it even autoboots. Great, but annoyingly I can't run some games - specifically *Strip Poker II, Operation Wolf, Thunderbirds, Captain Blood, Arkanoid* and *Xenon I*. These games require that they be booted and not run from Workbench or CLI. I've tried renaming my s and c directories to see if I can force the 2500 to boot from DF0: but no go. Can you suggest something I could try, something not too traumatic as I don't want a major exercise every time I'm in the mood for a game. Yours faithfully,

Warwick Alderton,
Mooroopna, Vic

Ed: *Your letter had rather a bloodcurdling effect - it arrived just as I was taking my own brand new 2500 out of its box for the very first time. And the bad news is that some games just won't run on the 2500. Even so, the problem you described shouldn't occur - the 2500 should boot from any disk in df0: before it even looks at the hard disk. Maybe a virus has overwritten your bootblocks? Try some other bootable disks - they should certainly prove whether your system is working as normal. Here's another suggestion. Some games won't work with the new 68020 board - as you probably know, you can force the machine into 68000 mode by holding down both mouse buttons while you reboot. You'll need all your fingers and a couple of toes to carry out this complex manoeuvre. If you succeed, you'll see a menu on the screen allowing you to set 68000 mode, which should make your machine run just like a standard 2000. Sad to say, even this doesn't help with some of the games I have tested. Things will get better though - some games, like Unreal from Questor, make special mention of A2500 users in the manual. Very re-assuring. Your letter has been forwarded to Megadisc too - maybe some of their high-tech readers will offer advice.*

Hall OF FAME

***********AMIGA***********

ARKANOID	- 976,548	Kamikaze Andy
BATTLE SQUADRON	-99,999,999	Amos Burbidge
BLOCKOUT	- 36,455	David Marsh
BOMBJACK	- 200,680	David Thompson
BUBBLE BOBBLE	- 1,200,460	V. van der Heyden
BUGGY BOY	- 103,350	David Thompson
CHASE HQ	- 4,285,000	Matthew Mantle
CONTINENTAL CIRCUS	- 4,529,690	A. Burbidge
CRAZY CARS	-84,006,720	Bill Horsley
CRYSTAL HAMMER	- 43,847	David Thompson
DENARIS	- 53,900	Peter Evans
DRAGON NINJA	- 204,880	Matthew Mantle
DOUBLE DRAGON	- 124,630	James Knight
GEE BEE AIR RALLY	- 307,466	Kamikaze Andy
HYBRIS	- 1,618,452	Matthew Mantle
IMPOSSIBLE MISSION	66,380	Diane Unwin
INDIANA JONES L.C.SS	- completed - 1,420,450	Phillip Nicoll A G Smyth
KARATE KID II	- 52,000	Robert Dunn
LEATHERNECK	- 83,300	Owen Webster
MAJOR MOTION	- 50,658	Owen Webster
MENACE	- 996,481	Kamikaze Andy
MINDWALKER	- 306,214	P Schumacher
MOUSETRAP	- 64,817	Matthew Mantle
OPERATION WOLF	- 344,800	John Boyle
OUTRUN	-11,102,200	Brad Stewart
OFFSHORE WARRIOR	- 626,345	Jacob Booth
PACMANIA	- 3,250,140(c)	Amos Burbidge
PINBALL MAGIC	- 332,390	Tracey Chilcott
PIONEER PLAGUE	- 35,412	Keir Sooby
POPULOUS	- 201,600	Nathan Allen
POW	- 612,865	David Thompson
RAMPAGE	- 111,600	Kamikaze Andy
SIDEWINDER	- 811,250(c)	Amos Burbidge
SILKWORM (Heli)	- 913,700	A J Dunstall
SILKWORM (Jeep)	- 515,100	Andrew Barker
SKWEEK	- 715,940	Stephen Lander (Steve Lee) Level 55
SPEEDBALL	- 17,650	Amos Burbidge
STARWARS	- 5,722,822	Christopher Mingos
33STRIDER	- 10,000	Nathan Allen
SUPER HANG-ON	- 13,857,903	Brad Stewart
SWORD OF SODAN	- 364,750	Kamikaze Andy
TEEN.MT.NIN.TURTLES	- 140,900	David McLeish
TEST DRIVE	- 112,915	Wayne Haesler
TEST DRIVE 2	- 307,910	Amos Burbidge
TETRIX	- Level 103	Sally Pollock
TURBO OUTRUN	-100,260,819	Matthew Mantle
TV-SPORTS FOOTBALL	-189-0	David McKinney
TYPHOON	- 54,255	Owen Webster
VIRUS	- 7,131	Amos Burbidge
WHIRLIGIG	- 28,210	Nathan Allen
XENON II	917,420	Mark Porta
ZOOM -	58,903	Sally Pollock

***********COMMODORE 64***********

BATMAN THE MOVIE	- 330,920	S Watford
BANGKOK KNIGHTS	- 36,800	Nick Van Heeswyk
BOMB JACK	- 344,560	J Jacobs
BUBBLE BOBBLE	-1,009,857	Kishore Ludbey
BUGGY BOY	- 118,750	Paul Millward
CHASE HQ	- 9,220,121(c)	Iceman
DOUBLE DRAGON	- 17,340	Paul Millward
DOUBLE DRAGON II	- 255,190	Nick van Heeswyk
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HANDBALL MARADONA	-	N. Van Heeswyk
HAWKEYE	- 59,000	Nick van Heeswyk
IKARI WARRIORS	267,800(c)	Iceman
INT. KARATE	- 139,300	Paul Millward
LAST NINJA II	- Nick Van Heeswyk (c 34.2 sec)	
OPERATION WOLF	168,789	Kishore Ludbey
OUTRUN	-6,438,787	Kishore Ludbey
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STREET FIGHTER	- 127,050	Chris Byrne
SUPER CYCLE	- 212,210	Iceman
TEST DRIVE	- 24,790	Jason "Maverick" Denham
THUNDERBLADE	-1,734,040	Troy Morrison
THUNDERCATS	- 57,500	Chris Byrne
TARGET RENEGADE	- 330,450	Chris Byrne
THE UNTOUCHABLES	- 70,230	Simon Watford
WONDER BOY	- 237,650	Kishore Ludbey

*Scores followed by (c) indicate that the game has been completed.

Mindscape Thunderstrike competition

➥ Fly the amazing Thunderstrike Space Cruiser in this month's Mindscape Competition. Thunderstrike is one of the hottest games around and it's getting rave reviews everywhere. "The graphics are great, the sound brilliant, and the gameplay absolutely absorbing - the speed at which the graphics move is quite stunning" says one English mag. There are three copies to give away, Amiga only I'm afraid. This month's competition is easy. All you've got to do is get your name and address in on the back of an envelope and be one of the first three entries drawn out of the hat. Quite tricky really. So get on with it folks - send those entries to Phil Campbell, P.O. Box 23 Maclean NSW 2463 before September 20th 1990.

SKATE OF THE ART

Here's some excitement! Join* Andrew Baartz *as he presents this balanced assessment of ...

➦For someone as uncoordinated as myself, skateboarding via video is an excellent arrangement - to be able to skate with my bottom safely on a chair, with nowhere to fall, is bliss!

My ill-spent youth was spent gathering a wealth of experience in pin-ball parlours filled with neolithic video game machines, so although I never achieved a great deal of success on a board, I've developed enough dexterity to overcome most of the difficulties of this simulation. And what a great simulation it is too!

Skate of the Art takes you to various panoramic locations, from Holland to Miami. The graphics are clear and crisp, from subways to SkateParks. There are twenty exacting levels of play, each one preparing you for the final challenge - The World SkatePark. But be warned. Only the best will get to attempt this one!

The controls are very simple. You really only need to know three things. With the fire button you increase speed. Moving the joystick to the left puts you into a tail slide. And if you do both at once you can do some pretty impressive "ollies" with multiple 360's.

If you're not up on the jargon, a "tail slide" is just what it sounds like - you lift the front of the board and slide the tail. A good way to approach the steeper ramps. An "ollie" is a bunny hop. But in *Skate of the Art* nothing is done by halves. Depending on your speed, you can spin around (that is, doing 360's), while you are doing an "ollie" and gain several metres in distance. This sort of jumping is critical to your success. Don't be fooled by the apparent simplicity of "Skate of the Art". It would be a big mistake to underestimate the amount of skill and accurate timing that it requires. With these basic skills you develop techniques for getting over obstacles and around other objects that impede your progress.

The initial scenes are set on a railway station platform. Besides the ramps and jumps, people have left various bits of luggage in your way. You're given five skateboards to begin. At first it seems easy and just requires a little practice. But each frame has its own particular perils - and the spills are spectacular! It's a fine combination of speed and timing. The computer graphics guys had fun with this one. I haven't replaced my joystick since my last review and I really needed a little more precision.

There are a whole range of exciting things waiting ahead, but I won't spoil your fun by giving too many details away. Besides, the anticipation might be too much for you and could put your concentration off. The movement is rapid and the reflexes are really put to the test. For those who are even more "unco" than me, there is a slow motion toggle. I was too proud to try it in the slow motion mode, but those of you who have no shame may find it handy. (Skate of the Art also has a pause toggle - which is quite useful too). And a few tips, from friends who really do know how to skateboard, won't go astray either.

Skate of the Art claims to be "The Ultimate Freestyle Skateboard Game". I wouldn't put to much weight on the word "Freestyle", since a two dimensional video screen does impose certain restrictions on a really three dimensional sport. Nevertheless, it seems to be the ultimate game, if you want to express those Atmospheric Aspirations!

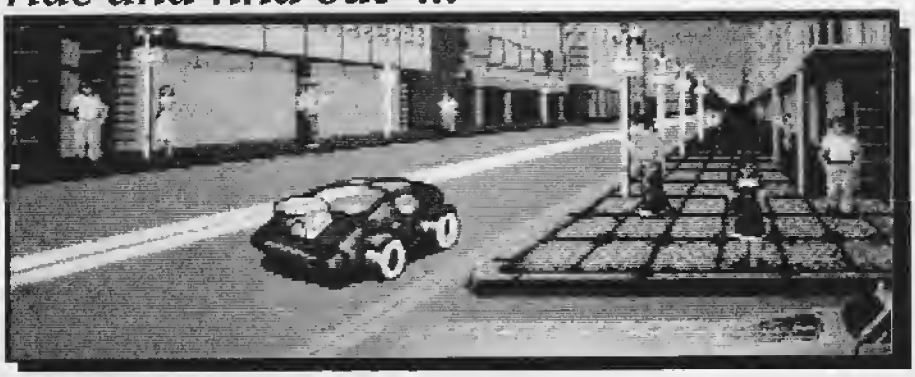
Take up the *Skate of the Art* challenge: Free your Body - Free your Mind - and enjoy it! As they say "So what the Heck! Jump on the Deck!" And make your mark in the Hall of Fame for the "Respectable Rollers". ❑

Distributed by:
Pactronics (02) 748 4700
RRP: Amiga $49.95

Ratings:
Graphics: 83%
Sound: 72%
Gameplay: 78%
Overall: 79%

Amiga

Resident racing expert* Juris Granis *straps himself in for some top-view racing action. Has* Hot Rod *got what it takes to beat the best? Come for the ride and find out ...

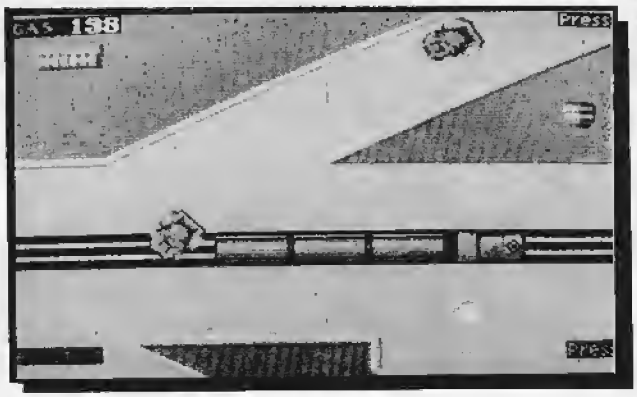


➡The lights are green, my engine roars, and I'm off and racing - well, at least I think I am. Believe me, in your first few games of Hot Rod this is no easy task. It takes practice - but it's worth it.

The loading procedure is quick and simple. The title screen is excellent - the graphics are a pleasure to watch, which makes this game highly addictive. This is a typical "View from above" race game, so all you can see is the top of the cars. Sound effects and music are OK, though not nearly as classy as the graphics.

The game has an amazing thirty tracks to complete so you will be stuck on your computer for a while. The computer will allow up to four players, but you'll need a joystick adaptor in the parallel port and four joysticks. Pressing the corresponding function keys will decide how many players will start the next race - you can do this while playing if someone wants to join in for the next race.

Your car is red, the others are yellow, green and grey. The computer starts the race by flashing three lights. Then you're off and racing. Your fuel is constantly being gurgled by the engine so it is an idea to collect the gas which is provided along the way - it's shown as a flashing circle with a G in the centre. You can collect points along the way in the same manner as collecting the gas. At the end of each level the computer awards bonus money to spend in the shops. (Bonus gas and points are awarded depending on how well the stage was completed.)



When you complete a level you will drive into a Parts Shop. Choose from a selection of tyres, Bumpers, Wings (not flapping wings, but tail wings for road handling), & Front and Rear engines.

Hot Rod is in some ways disappointing. Firstly if you get too far in front of the first car the computer will put you back to second place and deduct twenty points from your fuel - likewise if you get too far behind. Secondly the other cars which you race against can go through trains, cop cars and construction crews, though you can't. Not fair! If you happen to crash your car by running into cop cars, trains, or construction crews you'll lose twenty points off your gas. Thirdly when you buy equipment sometimes you lose all your equipment if you don't win the next race.

Sometimes there are hazards. In level five you are faced with sand over the track. In levels eight and nine you risk falling off bridges into the watery depths below. In the later levels of the game you will come across rain, snow drifts and ice over the roads. I found after level fifteen they start repeating the levels, though they got much harder.

This is a game that will test your reflexes - it's highly addictive and a must for car game freaks. It sure captured my attention and it should capture yours. ❑

Distributed by:
Ozisoft (02) 313 6444
RRP: Amiga: $59.95
C64 disk: $35.95
Cass: $26.95

Ratings:
Graphics: 80%
Sound: 60%
Gameplay: 72%
Overall: 76%

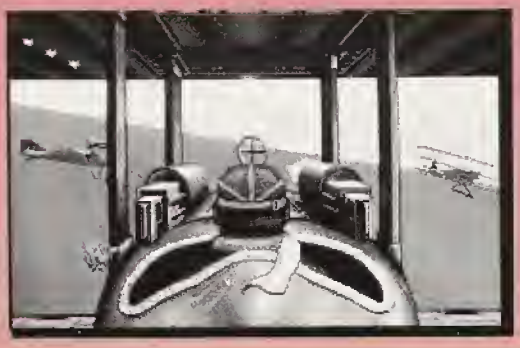
QUICKSHOTS

A quick look at what's new in the world of Games

WINGS -

Cinemaware are best known for their amazing "interactive movies" - games where you get to play the lead role in a movie that unfolds around you. But times have changed - Cinemaware have spread their wings and diversified into bigger and better things. And boy, have they done it well! I've only seen the demo version of *Wings*, but I can say without hesitation that it's shaping up to be one of the best games ever. You get to fly a classic bi-plane, and dog-fights are the order of the day. This is real "Red Baron" material, and your plane twists and turns beautifully as you try to drill your opponents full of holes. Graphics are a mix of filled-vector and bit map, giving an unequalled sense of realism. This is one to look out for, folks. We'll have a full review soon, so stay tuned.

Distributed by:
Questor (02) 662 7944
RRP: Amiga: $79.95
- Shipping 26th August.



UNREAL -

"Unreal, man" - hey dudes, that's cool talk from a long gone era. And now there's a game that goes by that name. *Unreal*. Meaning far out, cool, groovy. Or maybe in this case, too far out to be true.

Unreal is certainly an unusual game, and my first looks left me with mixed feelings. For a start, I've never met a game that switches from ultra-high res to ultra-low res with such little apparent embarrassment. The title screen is full of promise - a wonderful graphic in high resolution interlace mode, full of promise for great things to come. But then the game begins. Not in interlace. Not even in regular hi-res. But in graphics that are so chunky that your dog could eat them for dinner. Why? Dunno. But the funny thing is that it doesn't seem to matter.

You're controlling a golden pterodactyl-like creature as it flies across a prehistoric landscape. Unreal. You duck and weave between arboreal arches (you know - trees) and occasionally have to move fast to dodge a dinosaur skeleton - alternatively, you may choose to blast them with your anachronistic dual beam laser rays. Boy. This is fun. And wild. And ... well ... unreal. Sound effects are atmospheric, the graphics are unusual and very fast, and the game is certainly worth more than a passing glance. Supplied on three disks, the Amiga version of *Unreal* will keep you guessing for quite some time.

Distributed by:
Questor (02)
RRP: Amiga: $59.95

Ratings:
Graphics - 75%
Gameplay - 75%
Sound - 80%
Overall - 76%

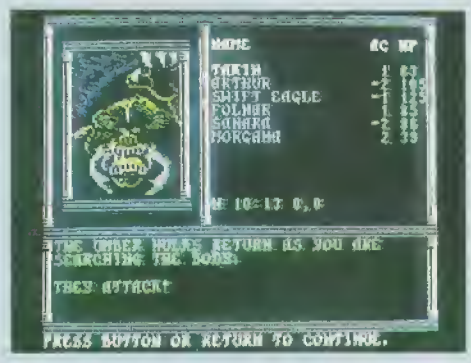
SECRET OF THE SILVER BLADES -

The frigid valleys of the DragonSpine Mountains echo with the screams of terrified miners. What have they done? They've disturbed an ancient burial vault and unleashed its terrible contents - terrifying monsters, straight out of the deep freeze. You and your fellow heroes are the only ones who can take them on.

Secret Of The Silver Blades improves on the popular *"Advanced Dungeons and Dragons"* game system used in *Pool of Radiance* and *Curse of the Azure Bonds*. If you've already conquered them and you're looking for a fresh challenge, you can transfer your team of characters and continue your life of adventure. This time, you can explore the largest 3-D adventuring expanse ever in an AD&D computer game.

C-64 graphics are top notch - as usual in the AD&D series - and as usual the command window displays all text in a specially designed font. If RPGs are your cup of tea, make this one the next on your list.

Distributed by:
ECP (02) 075 963 488
RRP: Amiga: $34.95



FLOOD -

What with the strange weather this year, a game called *Flood* is always likely to be topical. The fact that it's programmed by Bullfrog Software is quite appropriate in a wet sort of way - even more important, when you remember Bullfrog are the guys who gave us the amazing *Populous*, then you'll realise that *Flood* is definitely worth a look.

The idea of the game is very simple - within each level your character (Quiffy) must explore the caverns that make it up and collect all the trash that's not nailed down. Then he can use the end of level teleporter to proceed to the next of the 42 amazing levels. Quiffy is a versatile character, though a bit rotund - people have said the same thing about me! He can climb walls, leap long distances and even hang upside down - and believe me, they're all useful talents.During the game you'll fight off nasties like the Psycho Teddies - they look cuddly, but they're mad, dangerous and omnivorous. Watch out for ghosts and Bulbous Headed Vongs as well, not to mention the Beady Balls, Lumpy Wanderers and Vacuous Gombos.

Distributed by:
ECP (02) 075 963 488
RRP: Amiga $49.95

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NINJA SPIRIT

ANDREW PHANG *takes on the latest Ninja nasties, and finds that it's one for the tough guys. Do you qualify to take on the* **NINJA SPIRIT?**

➡1990 is definitely the Year of the Ninja. Our television and movie screens have been invaded by those "Teenage Mutant Ninja Turtles", and our computer screens have also been invaded by an avalanche of ninja games. The latest in this genre is *Ninja Spirit*, Activision's conversion of an Irem arcade game of the same name.

Each ninja game has a different twist to distinguish it from other games, and *Ninja Spirit* is no exception. You are Tsukikage ("Suki" to your friends), the ghostly spirit of a white wolf. When an evil Warlock takes over the realm, it is up to you to defeat the mage and restore order. To this end, the "powers that be" have decided to transform you from a wolf into an all-purpose ninja warrior. Being a ninja isn't all it's cracked up to be, and you yearn for those days where you could roam the wild plains on all fours. It is decreed that once you have killed the Warlock, you may return to your wolfly self, and so you set out on your quest.

I was pleasantly surprised by the fast loading time. Before you could say "Bruce Lee" the title screen flashed before my eyes, and it was soon loading the first level. Music blared from the speakers, and I found my Ninja character all alone in a temple. He wasn't alone for long! Suddenly evil ninjas sprang out from both sides of the screen. With a swift blow, "Suki" sent the marauders to Ninja hell. Evil Ninjas come in all shapes and sizes, from the "kamikaze" brown ninjas, to the fire throwing green ninjas. If you manage to kill a gold coloured ninja, a special token is dropped. Pick up the token to increase the firepower of your weapons. In later levels, some tokens will provide Suki with a "fire rope", a shield of fire which makes him virtually indestructible. Unfortunately, "fire ropes" only last for one level.

After a terrific battle at the end of Level One, I finally manage to kill the giant fire spitting statue. On to Level Two, and a new musical soundtrack starts to play. This is one of the great features of the game, as each level has different music (listen to the rock rhythms of Level Three!). Unfortunately there are no sound effects to complement the music - a well implemented "hee-yah" would certainly have added to the atmosphere.

Suki soldiers on, past the ninja filled forest and bridges in Level Two. Another huge monster lies at the end of the level. This time, it's a giant tree crawling warrior. A quick switch to the shuriken (throwing stars) as the weapon of choice, and soon this monster is fertiliser for the forests. The graveyards of Level Three are beautifully drawn, and feature some really smooth horizontal scrolling. All of the characters are nicely animated, especially the big monsters at the end of most levels. The backdrops are also commendable, with lots of colours and detail.

Ninja Spirit is a game with solid gameplay (in all, there are nine levels of ninja mayhem), solid graphics, and great music. However, there is one criticism of *Ninja Spirit* which reduces some of its playability and that is the level of toughness.

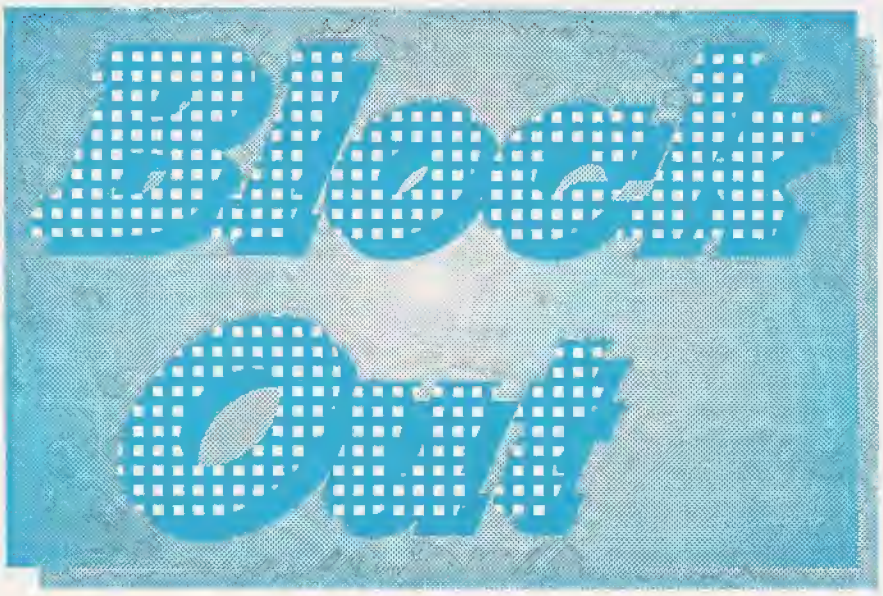
Make no mistake about it, *Ninja Spirit* is tough from beginning to end. There are certain factors that contribute to this. Firstly, each level has a five minute time limit. This is especially frustrating in Level Seven, where Suki must climb an impossibly high cliff and defeat a giant ninja powered kite within the time limit. Secondly, there is no continue option, and you only have five lives in each game. Finally, when Suki bites the dust and there are a few remaining lives left, you restart without your extra firepower and ninja spirits. This makes the game almost impossible to complete at higher levels.

I would heartily recommend *Ninja Spirit* as an excellent example of a horizontally scrolling arcade game. Despite its toughness, there is a certain addictive quality about this game. I keep coming back to play it, if only to prove to myself that no game is too tough for Kamikaze Andy! The drive to complete this game is certainly there, and your efforts to reach the final levels will be rewarded with some great action, graphics, and (especially) music in the later levels. Buy it, and prepare to be challenged! ❑

Distributed by:
Ozisoft (02) 313 6444
RRP: Amiga $59.95
C64: disk: $35.95

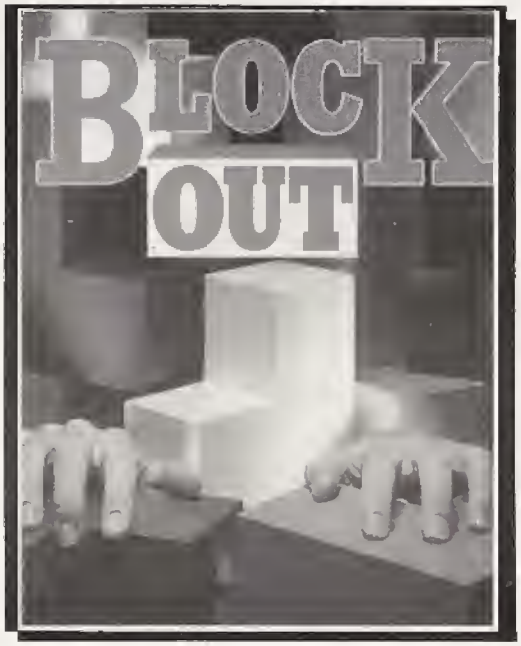
Ratings:
Graphics: 80%
Sound/Music: 86%
Gameplay: 80%
Value: 78%
Overall: 80%

Remember **Tetris?** *Now there's a new version, and this time it's in 3-D.* **Phil Campbell** *investigates ...*



➡As I lay me down to sleep, my head no longer fills with sheep. Instead, it fills with blocks. Falling blocks. They just keep on coming - falling and spinning, falling and spinning in a never ending cascade. It's like having rocks in your head, only worse. They come in lots of different shapes and sizes, clusters of cubes in every possible configuration, all of them spinning gently in my mind. And my nightmare is this. As they land I have to fit them all together - without leaving any gaps. A huge and never ending Chinese block puzzle.

That's the trouble with playing *Blockout*. The game refuses to stop when you turn off the power. Sure, the pixels will fade from your screen - but the game keeps going in your head. *Blockout* is a direct descendant of *Tetris*, the first - and only - Russian computer game to take the world by storm. *Tetris* was strictly two dimensional, and featured a range of simple interlocking shapes dropping into a rectangular frame. All you had to do was rotate them on the way down so they would neatly fill all the gaps. Each time a row was completed, it disappeared leaving room for more layers. *Tetris* met with rave reviews. It was described as the game that was "perfectly simple, and simply perfect." And it was. But what happens when you add a third dimension?



For a start, the rectangular frame becomes a three dimensional pit. Imagine, if you will, that you are looking INTO your monitor screen rather than at it. In the centre of the screen you will see the bottom of the pit, marked out as a grid. The grid lines are projected up the walls of the pit, radiating from the screen centre. Sounds confusing, I know - but it looks quite effective.

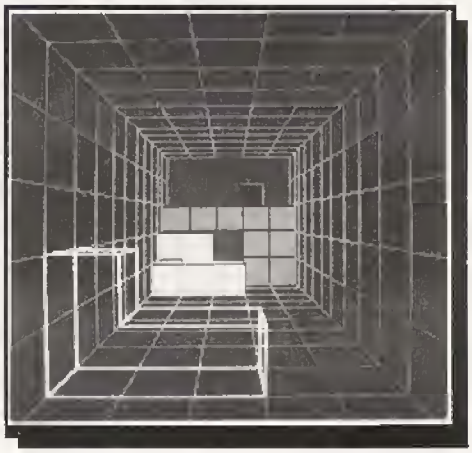
The falling blocks could be mistaken for fragments of an exploded Rubic's Cube. Don't be fooled. They're not - they are actually bits of a Soma Cube, which sounds more impressive when you describe the game to your friends. The Soma Cube is the product of an unusual geometric theorem produced by Danish mathematician Piet Hein. Basically, the theorem tells you that if your Rubic's cube falls apart then it is theoretically possible to put it all back together. Something like that, anyhow.

The upshot of all this is simple. No matter what shape it is that decides to fall into your pit, it is theoretically possible to interlock it with the other blocks in the pit to form a perfect cube. Like *Tetris*, if you can completely cover the floor of the pit, the layer will disappear leaving room for more blocks. Leave any gaps, and the height of your stack increases - when it hits the top, you're out of business.

Game controls are simple enough, though both hands are required. Your left hand controls the keys which flip and turn the blocks on each axis - your right hand moves the block laterally with either your mouse or another combination of keys. Co-ordination is tricky at first, making a visit to Training mode almost essential.

Blockout is a logical evolution from *Tetris*, and it's just as addictive. If you're a geometrical genius or a shelf stacker at Franklins you will immediately feel at home - for anyone else, a little perseverance will work wonders. The idea is simple, the gameplay is fun, and you can choose a degree of complexity to suit yourself. *Blockout* is the sort of game that is equally at home on both the Amiga and the Commodore 64, though obviously the block rotation is faster and smoother on the Amiga. Even so, the C-64 version is very playable - it's not a game that depends on flash graphics and sound effects. ❑

Distributed by:
ECP (075) 963 488
RRP: Amiga $49.95
C-64 disk $39.95



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Products

DataStorm

Feel like a good blast? Join **GREG MUNRO** *as he shoots everything to bits ...*

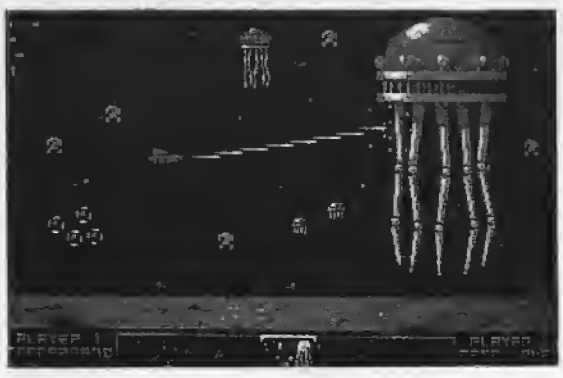
➡As Pink Floyd said, " then one day you find, ten years have got behind you ". It's been more than a decade since video games took off in a big way. And although those early arcade machines have long since died out, many have recently been resurrected in PC Land. Commercial and Public Domain versions exist of such classics as *PacMan, Galaxians, Centipede, Asteroids,* and of course the one that began it all, *Space Invaders* (see Phil's article, June ACAR, p70).

A Canadian company called "Visionary Design Technologies Inc", have also joined this "back to the future" trend. Their *Datastorm* is a clone of an arcade game called *Defender* that appeared eight or nine years ago. Remember *Defender?* It was one of the first to employ a horizontally scrolling field of play, as you piloted a wedge shaped spaceship along the surface of a planet, picking up pods to save them from attack waves of alien invaders. It was very fast, and totally incomprehensible to the uninitiated. My first efforts were measured more in seconds than minutes, I recall.

Datastorm is a little more player friendly, with full on-screen instructions (with graphics) on how to play. It's an excellent fast-and-furious shoot-'em-up (will somebody please invent a new term - I'm sick of "shoot-'em-up"! - Hey Mr Ed, how about a competition to find one?). The graphics are great, and the gameplay is fun. I only had one complaint - this is yet another of those games that keep your floppy disk spinning the whole time you play.

The credits are accompanied by nice pix of flapping flags representing the countries of origin of the programmers, and an excellent musical soundtrack. If you don't touch the mouse, the game automatically enters instruction mode. These animated instructions are clear and adequate, and may be paused so you can read each screen. You can just start playing and have fun shooting everything in sight, but it's advisable to read them, as the object of the game is not readily apparent.

When you finish with the instructions, you may choose the level of play and other variables. F1 to F4 buttons give a choice between games - one player; two alternate players with one joystick; two alternate players with two joysticks; and two player team. The two player team option is the most enjoyable and also the least difficult.



The first rule of play is to remember to hit the spacebar for shields at the beginning of each level. Forget and you'll soon disappear with a loud bang in a spray of pyrotechnics! The second rule is remember to turn off the autofire when you commence each attack wave, or you end up shooting the pods trundling along the surface of the planet, which you're meant to rescue. You collect these by running over them, and take them to a force shield beam for protection, before the nasty "Landers" swoop down to kidnap them and turn them into "Traitors".If you rescue all eight pods in an attack wave, you get a Man. If you get four Men, you get a Warp to a higher level.

Landers are one of about 25 types of attackers, many of which warp onto the screen at once in a spectacular and colourful display. There are Crazies, Pulsars, Blitters, Tornados, Twirlers, Gravitrons and many more, each with its own characteristics. Some multiply into other types when shot, like the proverbial sorcerer's broom. There are also two huge composite enemies that appear occasionally and take lots of firepower to destroy - Space Squids and Inter-galactic Space Skulls. Some enemies drop "Powers" - icons that give extra lasers, rapid fire, special shields, missiles that automatically shoot Landers, etc. Competing with your partner in the team game to see who can pick these up first can be hilarious, as it's very hard to do quickly.

The graphics in *Datastorm* are better than I remember from *Defender* (though it's been a long time since I saw a *Defender* screen!). Brilliant colours and lots of them, with that 3D metallic look; fast non-stop action; and challenging play make *Datastorm* an excellent and addictive game that is a lot of fun to play. ❑

Distributed by:
Pactronics (02) 748 4700
RRP: Amiga only: $49.95

Ratings:
Graphics: 80%
Sound: 75%
Playability: 90%
Addictiveness: 90%
Value: 80%
Overall 85%

CRACK DOWN

Great fast paced action!!!* ANDREW BAARTZ *takes on Dr K in his evil fortress to bring you this story. Now read on ...

➡*Crack Down* is a sensational action game. Everything about it is perfect for hours of gripping entertainment. The mission is to penetrate the fortress of the evil Dr K. and put an end to his dastardly schemes. To achieve this objective the heroes plant time bombs, at strategic location on each level and flee to the next before they explode. But Dr K. has some very nasty surprises to thwart your plans.

The game can be played in a one player or a two player mode. In both modes the computer is the opponent. The two player mode gives you a huge advantage. Dr K. has robot defenders called replicants that have to be dealt with and a partner can save you from some pretty nasty situations.

Andy and Ben are the names of your two heroes. They are armed with a cannon, a machine gun and a device called the super bomb. As you hunt around the corridors of the fortress, you will discover caches of more ammunition, to replenish your reserves. The super bomb kills every replicant in the immediate vicinity.

Both characters are martial arts experts. They engage in this whenever close enough to the robots. The machine gun is handy but only has the effective killing range of the screen. The cannon is the winner. When fired it hurtles down the corridor until it hits something - and sometimes it destroys a couple of things. This sort of weapon, that can kill beyond the line of sight, is only valuable because of sensor map at the top of the screen. It highlights your own positions on the level and those of the enemy. It also provides a map through the corridors to safety, it marks the sites to plant the time bombs and the locations of the extra ammunition caches.

The game begins with the heroes breaking through the main gate into the replicants' barracks. The orange guards are masters at Kung-Fu and the green guards are expert shots. You have three minutes to plant three bombs at three strategic locations, each marked with a big red cross. Then you must to escape through the other side before the barracks are totally destroyed.

Then comes level two - the underground cavern that takes you to Dr K's fortress. Machine gun carrying bullet proof guards just keep on coming out of the trap-doors within the maze complex. However, nothing that any self respecting super-hero will be worried about. After destroying that level it's on to the refinery level.

Here the guards hunt you with machine pistols. Quick reflexes are needed as you throw yourself against and behind walls and barricades to dodge their line of fire. The joystick control is good. Too good - be careful not to throw yourself into the water canal and drown. There are some flame-thrower carrying replicants to dry you off if you do. Escape without third degree burns, if you can!

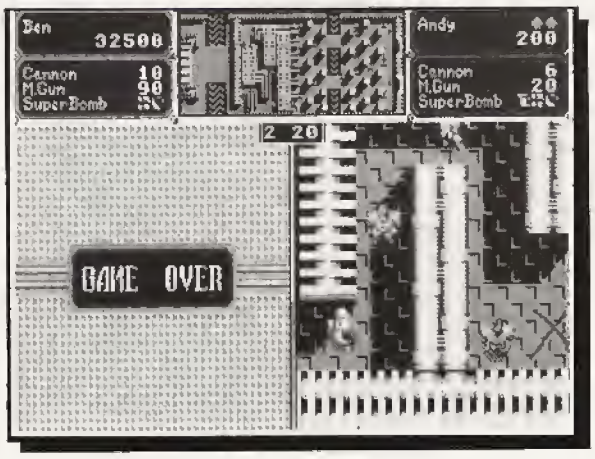
The fourth level takes you deep into Dr K.'s complex. The electric doors can be used to your advantage, if you think about it. Avoid the line of fire. Try to lure the guards into the open. Hide and ambush them. Choose your battles wisely and be ready with the superbombs. This level also supports the transporter room - guards materialise from nowhere, making your escape rather dicey. The bad news at this point is there are twelve levels to go - and some of the bad guys that you've got to face are really bad. There are shield carrying, sword wielding replicants that still come at you after three or four cannon blasts. When you get to this stage it pays to pause the game and use the map to work out a strategy. You can't afford to just attack randomly.

The "Continue" option is a nifty feature. Your character has five lives. If you've earned enough points when the fifth life is lost, you can either trade your points for five more lives and continue, or stop and glory in your high score.

Crack Down will give you some of the best fun you'll ever get. Buy it! ❑

Distributed by:
Ozisoft (02) 313 6444
RRP: Amiga: $59.95
C64 disk: $35.95
Cass: $24.45

Ratings:
Graphics: 78%
Sound: 72%
Gameplay: 83%
Value: 85%
Overall: 80%



Adventurer's Realm

by Michael Spiteri

Hello adventurers all around Australia. Welcome to Adventurer's Realm, the section of the magazine that is dedicated to all adventurers, role players, and wargamers. If you are stuck in any adventure game, write to me at the address below. If I cannot help you, your problem will be published on these pages for someone else to ponder. If you can help someone or can give some general hints, then please send them in! The address for adventure and wargame correspondence is:

Adventurers Realm P.O.Box 351 Pakenham Vic 3810

*Kamikaze Andy can offer help on most role-playing games (Ultima, Pool of Radiance, etc), but he doesn't give hint sheets! His address is:**The Dungeon P.O.Box 315 Maddington WA 6109***

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Realm's Chit-Chat

➡Software queries flood the Realm this month. Edward Chapman of North Balwyn in Victoria has searched high and low for *Lord of the Rings* on disk. The original distributors S.L.M. Publishing have since been taken over by Mindscape in Sydney. They advertise quite often in this magazine, so give them a try. If worse come to worse, you could contact the programmers, Beam Software, based in Melbourne.

Regular realmer Andrew Hansen (Pennant Hills, NSW) wants to know if *Ultima V* has been released yet on the Amiga. According to Realm's Roving RolePlayer Kamikaze Andy, the game was released on 16 bit machines only recently (read ahead for more *Ultima* info!)

Bev 'The Beaver' Deegan thinks she might have lost her money when she wrote to a mail order company for her copy of *Scapeghost*. Has anyone seen *Scapeghost* about anywhere. Tim Allison of Questor, major distributors of Rainbird products, is unable to confirm its release in Australia yet.

Finally, Computer Spot is advertising *Dragon's Lair II* for the Commodore 64. Methinks this is the tape version released long before the recent fancy graphix game for the Amiga.

Clever-Contacts

Two more clever contacts who are willing to offer their time for your personal adventure problems. This month, Sierra fans are treated out.

Name: Robert McGechen

Address: 51 Exmouth Road, Dapto, NSW 2530

Help offered: *Kings Quest 1,2,3, Space Quest 1,2,3, Leisure Suit Larry 1,2,3, Police Quest 1, Maniac Mansion, Zak McKracken, Future Wars* (and possibly *Gold Rush*).

Name: Nathan Allan

Address: 11 Maple Avenue, Pennant Hills, NSW, 2120

Help offered: *Leisure Suit Larry 1,2, Space Quest 2, Kings Quest 1,2, Ultima V, Police Quest 1, Faery Tale, Zork 1,2,3.*

Free Hint Sheets

The following hint sheets are available at no cost at all (just make sure you enclose a stamped addressed envelope), however due to a limited supply, you are entitled to any four from the list below.

Bards Tale I	Borrowed Time
Bards Tale II	Never Ending Story
Bards Tale III	ZZZzzzzzz
Hitchhikers Guide	Zork 1
Faery Tale	Zork 2
Castle of Terror	Zork 3
Adventureland	Deja Vu
Pirate Adventure	Dracula
The Pawn	Fish

Many thanks to everyone who sent in hint sheets to be added to this list. I am in the process of converting them all to the standard A4 format. I'm also working on a special hint book packed with hints and tips sent into the Realm over the past four years.The address to write to for your hint sheets is:Free Hint Sheets, P.O. Box 351, Pakenham, Vic

Problems, Problems and More Problems (or the Troubled Adventurers Department)

The following adventurers are stuck in some pretty heavy games, and your assistance would be greatly appreciated.

A.J.Barnard of Epping in Victoria is stuck in a C64 adventure called *The Detectives*. Opening a safe and working out some secret passages are problems causing grief.

An adventurer called **Michael** (not me!, really!) is stuck in *Tass Times*. After rescuing Gramps from the white tower, how do you meet up with Snarl, and what action do you take? Then in the *Crimson Crown*, how do you get the silver shiny thing that is stuck in a crag in the lake. Also, what do you say to the wise owl in the tree?

Trevor Robinson of Peak Hill in NSW is stuck in *Future Wars*. A certain man with a gun that obviously is not fake, has the annoying habit of killing Trev. Not very nice, but there must be an answer...

Slaygon, a game never heard of among the ranks of adventures in the Realm, is troubling **R.Coomber & Son**. Help wanted on what to do after completing the first level.

David McKinney, donator of hint sheets galore, has got himself really stuck deep in it. He's been playing the original adventure (550) found on Fish Disk 82. The following problems are making David cringe with agony:

1) How do you get the sword from the stone? (Mike's Tip: Try eating mushrooms).

2) How do you kill the ogre?

3) How do you get across the bridge in the volcanic area? I think these are relatively simple problems compared to those in *Hitchhikers Guide*, which Dave claims to have solved in three days (and I betcha he spent every minute of those 72 hours behind his computer!).

The problem section would not be complete without one from the dreaded Pro-Pack adventure series.

Anthony Jones of Windsor in Qld is stuck in *Island of Spies*. He simply wants to know how to cross the crevice.

Meanwhile, *The Pawn*'s advance interactor is playing word games with **Adam Holyoak** and **Wilma Ledema** of Thornlands in Qld. They tried entering the following commands and received some very weird replies:

▲ They entered: Please give me some help on the Boulder.

▼ The Game replied: To what?

▲ They entered: Move it!

▼ Game replied: But you have got the player!

▲ They entered: Examine player.

▼ Game replied: The player looks a wild and crazy guy.

They checked their inventory and there was no sign of a player there! (MS: I think they've got a case of the *Hitchhikers*!)

Ross Turner of Kambalda West (W.A) is stuck in a few role-playing games that are beyond Kaz Andy.

In *Legend of Blacksilver* he cannot find the key to get into the last (yellow) teleport section of the second panel of labyrinth castle.Then in *Phantasie I*, he cannot get the water and earth elemental runes or get into the Delbonial Clerics dungeon.

Gerald Boots of Goulburn in NSW is stuck in *Space Quest I*. The mundane task of killing the monster Otor is troubling Gerald at the moment.

Then, in *Space Quest II*, **Susan Dawson** wants to know what to do with the running man. Then in *Fish*, what does she do once she has killed the bird and made the gold mould?

Belle Sherrin of George Town in Tassie is stuck in *Knight Orc*. She has finished part 1 and has 9 spells in part 2 and 3, but now she's hit a brick wall.

Graeme Evans of Clifton Hill is stuck in *Leather Goddesses of Phobos*. First he keeps getting zapped by the Ion beam on the Canal. Then in *Cleveland* he cannot find out how to move beyond the initial scene (Mikes tip: Try looking through the bedroom window!)

J.H.Roelofs of Norseman in W.A. is stuck in *Holy Grail*. Having found the grail, he/she does not know what to do with it! Does it have something to do with the wizard in the cave, **J.H.** asks?

Bastow Manor is also causing concern - like getting into the house!

An adventurer with an unreadable signature from Mandurah (in W.A) wrote with problems in *Leisure Suit Larry*. Could someone send in a detailed solution to obtaining the wine for Fawn in the honeymoon suite.

Last but not least, *Lurking Horror* is troubling **Scott Walker** of Balmain (NSW), who asks...

1) How do you leave the dome with the hand?

2) How do you leave the lab after dipping the hand?

3) Can anything be done with the altar or the brick wall?

Help, Help and More Help
(or the Smart Adventurers Dept)

If your problem appeared among these pages a few months back then there is a very high chance the solution is here. Many thanks on behalf of all the troubled adventurers to all the smart adventurers who sent in their hints and tips.

Game: Leisure Suit Larry II

For: Susan Dawson

From: Nathan Allen (Pennant Hills, NSW)

Help: To open the elevator at the top of the volcano, move very close to the edge of the chasm and stuff airsick bag in bottle, then light bag, and very quickly, drop bottle. The explosion should open the elevator.

Game: Indy

For: Spaceflight

From: Robin Trulock (Glenhaven, NSW)

Help: To open the chest in Henry's house, pull the bookcase on top of the other bookcase. There is sticky tape on the back of it which contains the key for the chest. The sticky tape can be dissolved by the cleaning liquid in a jar in Indy's room at the college.You cannot get to the crypt through the grate. You must first have the hook from the skeleton's arm and the wine bottle from the restaurant (where you meet Dr. Schneider). Look at the bottle before trying to take it. Then in the catacombs, find the torch on the wall and use the bottle with the torch. Refill the bottle by finding the room full of water (with the wooden plug under the water) and use bottle with pool of water. Then use bottle with torch again to free it. Pull the torch and . . .

Game: Zak McKracken

For: Ben Del Fabbro & Keir Sooby

From: Mark Healy (Esk, Qld)

Help: To get Zak up to Mars you must find the other crystal shard (in the Mayan Temple). The dreaded force field can be turned off by obtaining the Ankh (behind the second massive door). To open the second massive door record the sound of another massive door. Once you have both crystal shards, use the

scroll, the pole, and the shards at stone henge.

Game: Space Quest II
For: Anyone!
From: Mark Brown

Help: Watch out for the affectionate Alien on the asteroid. Anyone lost on the asteroid? Go down to level two (use the stairs), walk left, then walk right. The floor will start to slide to the left. Wait until the last second then put the plunger on the wall. The robots will short circuit and you will be free to walk past them to Vohaul's control centre on the right.

Game: Pool of Radiance
For: Eddy Cheung
From: Paul Bartsch (Adelaide, S.A)

Help: When constructing a party, have several specialist fighters so they progress levels quicker. Have several specialist magicians for the same reason, and then one or two combinations.Go to the fighter and rogues guild and enlist a hero to your party. Go to the uncivilised area and fight a group of monsters (any will do). Kill them all and also the hero. Collect all their weapons and especially the heroes, as these can all be sold at the shops (MS: What a barbaric game!!).With equipped characters, go to Sokol Keep. To avoid undead parties, choose to parlay (talk) and say the word SHESTNI which causes them to leave.

The Dungeon by Kamikaze Andy

The Dungeon is usually your column for the latest in the news and reviews of role-playing games, but with this month's instalment I've decided to profile a company which is the very essence of role-playing.

That company is Origin, home of the mighty *Ultima* series and the liege of all role-players, Lord British. A profile of *Origin* at this time also coincides with the celebrations underway in the realm of Britannia, for 1990 is the 10th anniversary of the creation of *Ultima*. The company behind the game, Origin, was only formed in 1983, as a result of the increasing popularity of the *Ultima* series. The first two *Ultima's* were previously published under the *Sierra On-Line* label, and it was the success of *Ultima II* (over 100,000 sold within two years and for 8 bit machines only!) which prompted the creator of the *Ultimas*, Lord British, to start his own company. The history of Richard Garriott (alias Lord British) is just as fascinating as his creations.

Richard is the son of Owen Garriott (an ex-Nasa astronaut who was part of the Skylab projects), and was born in England. After moving to the States at an early age, he began working on his first project while working as an employee in Computerland. This project eventually turned into *Akalabeth*, which sold 25000 copies on the Apple II alone. The success of *Akalbeth* persuaded Richard to pursue computer games designing as a full time job, and within a year, the first *Ultima* was born. Origin's original founders consisted of Richard Garriott, father Owen, brother and president of Origin, Robert, and a close friend Chuck Bueche (designer of *Autoduel*).

Over the years, Origin has grown in size and stature, and it currently has two head offices (in Texas and New Hampshire). The games produced by Origin have also varied over the years. Although the *Ultima* series was the established Origin product, the company began to diversify into science-fiction in 1986 with the release of *Autoduel*. Based of the popular Steve Jackson pen and paper rpg, *Autoduel* was an immediate hit and received many accolades from the U.S press. The game proved to the public that Origin was more than just a one-product company, and this was further shown with the release of *Moebius*, an oriental rpg. Already selling nearly 100,00 copies to date, it has spawned a recent sequel. Actually, all of Origin's re-

Above pictures from Ultima VI.

leases have been spectacularly successful, with many pushing the 100,000 copies sold mark. The first four *Ultimas* have sold over 1 million copies in total, with *Ultima IV* current holding the best selling Origin title at over 250,000 copies sold. *Ultima V* has nearly reached the 200,000 barrier, and the recent release of the 16 bit versions should push it past the 250,000 mark.

The latest *Ultima, Ultima VI: The False Prophet* has smashed sales records on the PC, with over 50,000 sold in the first few months. Recent big sellers include: *Space Rogue, Windwalker, Knights of the Legend, Times of Lore,* and *Omega.* At the recent CES show in Chicago, Origin previewed its new releases, which included *Bad Blood* (a post nuclear sci-fi rpg), and *WingLeader*, a space-based rpg. Also on preview was a new series of titles which would use the technology of *Ultima*, but with entirely different storylines. The Savage Empire used the graphics and game system of *Ultima VI*, and pits the player in the Amazon jungle on the quest to defeat a mad scientist and recover a precious artifact. Origin has decided to name the titles using *Ultima*-related storylines as its *World of Ultima* series. The success of *Ultima* and Origin has come from around the world. There are plans to produce French, Spanish, and German versions of *Ultima* games, and there are also Nintendo and Sega versions of *Ultima III* and *IV* (which have sold over a million copies by themselves!)

Lord British is now an international celebrity, from Europe to America to Japan. It has been Japan which has taken Lord British and *Ultima* to the zenith of its popularity. There are even Ultima comic books, novels, records and CD's, and even a cartoon featuring the folk of Britannia! Lord British himself appeared on Japanese TV in numerous commercials for the Nintendo version of his game. It is no wonder Richard Garriott can afford to own a huge mansion in the hills of Texas, complete with waterfall, caves, secret passages between rooms(!), and an entire collection of fantasy memorabilia.

So, what of the next 10 years? Origin and *Ultima* series will continue to dominate software sales, and Lord British is currently designing the next sequel, *Ultima VII* (with a projected mid 1991 release). there are also plans for *Ultima* fantasy novels and an *Ultima* board game has already been released. Perhaps a movie version of *Ultima* is next....?

(The Ultima games and others by Origin are distributed by Dataflow, 02 331 6153.)

Realms General Hints & Tips

Game: Lord of the Rings

Help: To defeat the Barrow Wight, you need to rob him of everything then throw an elf stone at him. Moira cannot be entered without Gandalf. To cross the ford at Rivendell you must ride the white stallion. Tell it where to go, and discard it once you have crossed over. Radagast can be found in the Blue Mountains observatory to the west of Hobbiton. Do not kill the monk! (Tips courtesy of David Oxley)

Game: Gold Rush

Help: Look between the boards in the house in the park. Buy vegetable and citrus fruit for the journey. Look out for mozzies in Panama!

Game: Bards Tale II

Help: In the bank, list the accounts and close the one with just asterixes and look at your gold. Wow! One billion just for you! (Tips courtesy of Mr Duuk Tsarith)

Game: Dallas Quest

Help: Apply a little warmth to the eggs, and see what pops up!

Game: Magicians Ball

Help: Once you've got the mouse, its tail can unlock the wooden door. Once open, break the mouse. When it crumbles you can unlock and open the sluice gates. The key in the fountain unlocks the cell of Azul.

Game: Return to Eden

Help: To avoid the explosion, dig at the molehill and go down and sleep. To pass the Levaither you need the fungus when the brick coloured bird appears, so...drop sweetpea, get egg, plant egg, enter house, get fungus. (Tips courtesy of Stuart Elflett). ❑

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